

The Experiences of Mental Health Professionals and
Patients in the use of *Pro Re Nata* Medication in Acute
Adult Mental Health Care Settings: A Systematic Review of
Qualitative Evidence.

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Abstract

The use of *pro re nata* (PRN) medication, a medication that is given when needed, as opposed to medication that is given at a regular time, is surrounded by claims of misuse and poor accountability within the mental health setting. Gaining insight and understanding into the experiences of health professionals and patients in the use of PRN medication will assist in contributing to improving education and safety around this common intervention.

The objective was to synthesize the best available evidence of qualitative research that looked at the experiences of mental health professionals and patients in the use of PRN medication in acute adult mental health care settings. The review considered studies that included mental health professionals who were working in an acute adult mental health care setting as well as adults who were admitted into an acute adult mental health care setting.

The phenomena of interest was the experience of the mental health professionals and patients in the use of PRN medication in acute adult mental health care settings.

Studies that focused on qualitative data including, but was not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research were considered. The databases searched included: CINAHL, PubMed, Embase, Scopus, PsycINFO and the search for unpublished studies included: Proquest Dissertation and Theses, Mednar and Google Scholar.

Qualitative research findings were pooled using the Joanna Briggs Institute

Qualitative Assessment Review Instrument (JBI-QARI). This involved the aggregation or synthesis of findings to generate a set of statements that represented that aggregation through assembling the findings rated according to their quality, and categorizing these findings on the basis of a similarity in meaning. Categories were then subjected to a meta-synthesis to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice.

Studies published in the English language were considered for inclusion. Literature from the last 30 years was searched to ensure currency and relevance of the research.

Four studies were included in the systematic review. Two studies each from both groups' perspective. These experiences were combined in one synthesis to look at the issues from mutual perspectives. A total of forty findings were extracted. The findings were grouped into ten categories and five synthesized findings were developed.

The findings demonstrated that PRN medication use among mental health professionals and service users is subject to many variables such as individual decision making to organizational policies. The findings also showed there are many contributing factors to the prescribing and administering of PRN medications. Patients had views and opinions on their use of PRN medication describing that they found PRN medication to be useful in helping them to take control of their symptoms and that education around alternatives to PRN medication administration should be offered.

Thesis declaration

I certify that this work contains no material that has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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21st June 2016

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Chapter 1: Introduction

1.1 Introduction

This chapter introduces the topic and provides a summary about PRN medication and its use in acute adult mental health care settings. A statement of the review question is provided as well as a description of where the study is situated in the broad field of research on this topic. The structure of the thesis is outlined. An overview of the science of evidence synthesis and the scientific basis of the chosen approach to synthesis is discussed, and a definition of the terms that have been used within this thesis is provided.

1.2 Structure of the thesis

This thesis is divided into four chapters. A brief summary of each chapter is provided.

Chapter 1 is an introductory chapter that provides an overview of the topic and situates the study within the broader field of research on the subject of PRN medication. An overview of the science of evidence synthesis is presented along with an explanation of why the meta-aggregative approach was chosen when undertaking the qualitative systematic review that underpins this thesis. The chapter concludes with an explanation of commonly used terms within the thesis.

Chapter 2 presents and explains the systematic review protocol conducted before the systematic review.¹ A protocol pre-defines the methods and the objectives of the systematic review.² (p.13)The protocol that is presented in this

chapter is a reproduction of the protocol that was accepted and published in the Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports.¹

Chapter 3 presents the findings of the systematic review. The search strategy is discussed in detail. The assessment of the methodological quality of the papers selected for the review and the approach used in the evaluation is discussed. An explanation of the data extraction and the process used to undertake this task is described. Each of the individual studies is examined. The findings, categories and the synthesized findings that were derived from the studies are described and illustrated in tables which demonstrate this process. Concluding the chapter is a list of findings from each paper and the accompanying illustration/s.

Chapter 4 discusses in the broader context the findings of the systematic review. A discussion of issues generated from the systematic review is explored in greater detail. Implications for practice and research are also presented. Limitations of the thesis and the final conclusions complete the chapter.

1.3 Situating the study

1.3.1 Defining PRN medication.

PRN medication is commonly prescribed and used in acute adult mental health care settings in addition to prescribed medications that are administered at regular intervals.³ *Pro re nata* medication is commonly referred to as 'PRN' medication or 'as needed' medication or 'as required' medication. The Latin phrase "*pro re nata*" means - for an occasion that has arisen, as circumstances

require, as needed.⁴ A medication that is given “as needed” as opposed to a medication that is given as a regular order or given at a regular time.⁵ PRN medication is commonly used in acute mental health settings.⁵ The most common type of PRN medication administered by mental health professionals in this setting is psychotropic medications. Psychotropic comes from the Greek word Psycho - a combining form meaning psyche that indicates the soul, mind or spirit as opposed to the body, and from the Greek word tropo or tropos “turning” hence, what turns the mind.⁶ Psychotropic medications affect chemical levels in the brain that can affect mood, perception and behavior.⁶

1.3.2 PRN medication and the mental health care setting.

When patients are admitted into acute mental health care facilities, either as a voluntary or involuntary patient, they are often prescribed regular medication as part of the inpatient treatment.⁷ Commonly, PRN medications are prescribed as an adjunct to the regularly prescribed medications. These PRN medications are available for staff to use if they are needed.^{3, 8, 9} The administration of medication to assist sleep is an example of this. If a patient has difficulty sleeping, then a PRN medication could be considered. Temazepam, a benzodiazepine, is an example of a medication that can be administered to assist sleep. Another example is if a patient was becoming agitated due to symptoms related to psychosis, a PRN antipsychotic medication may be available to ease the patient’s distress. Olanzapine, an antipsychotic medication, may be administered to relieve symptoms associated with psychosis such as auditory hallucinations.

1.3.3 Justification for the study

There is considerable research on the topic of PRN medication administration and use from a quantitative perspective.⁸⁻¹³ Much of the quantitative research is retrospective data and audits obtained from patients medical records. The quantitative data obtained is useful in understanding some of the circumstances around PRN medication prescription and administration such as what types of PRN medication are given and how often PRN medication is given but the quantitative data is not able to give a clear understanding of why its use in acute mental health care settings is subject to inconsistencies. Decisions to administer PRN medication can be multifaceted.³ Some of the inconsistencies are related to the individual mental health professional and their decision-making around PRN medication administration based on the patient's symptoms.^{3, 14, 15} Hiltons research found that there were no quality assurance or clear national standards for the use of PRN medication and that PRN medication practices were fundamentally driven by anecdotal evidence and are mostly unregulated.³ Bakers best evidence synthesis review found practices around the administration of PRN medication varies broadly and that it appears to be influenced by multiple factors.¹⁶ There are many variables that affect this common intervention, and it is important to gain an understanding of why this is so. Some of those variables are the amount of medication prescribed and administered; the circumstances surrounding administration and the decision-making; and views of individuals about why and when to use PRN medication. Gaining insight into the experiences from both the mental health professionals' experiences and the patients' experiences with PRN medication will provide a

deeper understanding of the issues surrounding its use in acute adult mental health care settings. This deeper level of understanding may result in improved practice. This study has sought to understand the issues and experiences that patients and mental health professionals have when using PRN medication.

1.3.4 Legislation, policy, and guidelines of PRN medication

As the name suggests, PRN medications are to be administered as needed, as long as the conditions for the administration have been met.³ Internationally, practice around the control of medicines, including prescription and administration, varies according to each countries' states (or regions) legislation around the use of medications. In Australia, the states and territories are also guided by their legislation. Local health networks are further guided by policies and guidelines around the practice of prescribing and administering medication. In South Australia, the prescribing of medicine is governed by the Controlled Substances Act, 1984.¹⁷ The controlled substances legislation provides registered health practitioners and license and permit holders with privileges around possessing, supplying, prescribing and administering drugs.¹⁷

In Australia, the Australian Health Practitioner Regulation Agency (AHPRA)¹⁸ is the organization responsible for the implementation of the national registration and accreditation scheme. In addition to this, health professionals are guided by their respective professional boards; medical officers are guided by the Medical Board of Australia¹⁹ and nurses are guided by the Nursing and Midwifery Board of Australia.²⁰ Mental health nurses in Australia are also guided by the Australian College of Mental Health Nurses (ACMHN) Standards of Practice.²¹ Common law

requirements also need to be considered. In South Australia, the Mental Health Act 2009 states that patients rights need to be considered including patients participating in their own care planning and treatment.²²

In Australia, in the acute mental health care settings, it is the medical officer who prescribes medication, including PRN medication. It is the Registered Nurse or Enrolled Nurse, with a Diploma in Nursing, who administers the PRN medication. Nurses are also often guided by the local health networks in regards to policies and guidelines surrounding medication administration.

In the United States nurses practice under the guidelines of the Nurse Practice Act (NPA) which is enacted by each of the states and territories. The United States Constitution does not include provisions to regulate nursing practice and leaves the responsibility to the states. Each of the states establishes their board of nursing to establish regulations that are consistent with the NPA such as standards and scope of practice.²³ In the United Kingdom the Nursing and Midwifery Council (NMC) is the regulator for nursing and midwifery practice. The NMC's standards for medication management recognizes that the administration of medicines is an important aspect of nurse's professional practice. The control of medicines in the United Kingdom is associated with the British and European legislation and is enacted primarily through the Medicines Act (1968).^{24, 25}

1.3.5 Existing research on PRN medication

Research conducted on PRN medication in acute mental health care settings highlight that the use of PRN medication is inconsistent and related to many

factors.^{3, 16} Research has also focussed on the lack of an evidence-base for its use in these settings.^{3 8, 26-29} Additional areas of research on PRN medication are the lack of alternative therapies that are being used or considered for use⁹ and lack of education around PRN medication use for both patients and mental health professionals.^{28, 30}

Global research conducted into PRN medication use in acute mental health care settings includes a literature review in which the aim of the research was to evaluate the literature on the use of “as required” or PRN medication. The authors looked at 15 studies from several countries including Australia, England, USA and, Canada. Most of the studies were from retrospective chart reviews. The studies were mostly concerned with describing the circumstances of PRN medication use and its effects.³¹

Some of the findings were that PRN medication is often used as a containment strategy in inpatient units. It is commonly used in the early stages of a patient’s admission, and its use diminishes as the duration of the admission increases. The authors found that PRN medication is often used alongside other containment approaches, and it is often prescribed alongside regularly prescribed medication. The researchers suggested that this can mean that there is a risk that, if it is administered, PRN medication can lead to unintended high doses, or potentially significant drug interactions although these appear not to be common in practice. Both clinicians and service users were found to be for PRN medication use.³¹

A systematic review has been recently conducted comparing the effects of “as required” medication with regular patterns of medication for the treatment of

psychotic symptoms or behavioral disturbances.²⁹ Unfortunately, the authors were only considering randomized controlled trials in the review and found no such studies. The authors, therefore, concluded there was no evidence to support or refute the use of “as required” medication and suggested that practice should be based on clinical experience. Douglas-Hall further claims that the use of PRN medication is perceived as beneficial and allowing for greater flexibility in administering medication but that it may also be considered punitive by the patient.²⁹

1.3.6 Considerations for psychotropic PRN medication use

Even though patients are often prescribed regular psychotropic medication in acute mental health care settings, they can still experience distress and unwanted symptoms from their illness.³² This may increase the risk of harm to themselves, other patients or staff. PRN medications are available in these circumstances. Staff or patients can initiate the administration of PRN medication and the most common situations in which PRN medication can be used include:³²

- Suffering arising from severe psychopathological symptoms.
- Agitation that has originated from the person suffering from a relapse of their mental illness.
- The anxiety that has resulted from psychological phenomena or from things that may be happening in the ward environment.
- Impulses that occur to self-harm or from suicidal ideation.

- Insomnia.
- Physical aggression.
- Being severely disorganized in behavior and putting one's self at risk.
- Withdrawal from substances and intoxication.³²

Understanding the use of PRN medication from the patients' perspective is important. The usual practice of the medical officer writing the prescription for PRN medication and the nurse assessing the patient for administration of the medication is important in the process, but it is the patient, who ultimately will benefit, or not, from its administration. Taking all of the factors into account includes taking the patient's perspective into account.

1.4 Statement of the review question.

The systematic review question addressed the following:

What are the experiences of mental health professionals and patients in the use of *pro re nata* medication in acute adult mental health care settings?

1.5 Overview of the science of evidence synthesis.

Formal methods and systematic approaches for evaluating and collating evidence have been established in recent decades.³³ Research findings synthesized in a systematic manner were first introduced formally in 1975 under the term meta-analysis.³³ Meta-analysis was a term introduced by Glass who conducted syntheses in the area of psychotherapy.³³ The previous syntheses

such as those by Glass were focused on broader areas of social interventions and public policy. As these systematic syntheses developed, they included the areas of medicine and health.³³

Traditional literature reviews gather information about a particular subject matter, but if conducted according to no stated methodology, they are difficult to replicate and leaves the findings and conclusions of the review up to the insight of the authors.³⁴ A systematic review, also known as research synthesis, endeavors to summarize a body of literature in a transparent and reproducible way delivering a complete and unbiased synthesis of relevant studies into a single document.³⁴

The Cochrane Collaboration has been described as being at the forefront of the scientific development of a method to systematically review and synthesize research evidence.³⁵ This evidence, predominantly from randomized controlled trials, has been used to answer questions focused on the effectiveness of healthcare interventions.³⁵ The Cochrane Collaboration established a rigorous method that standardized a very highly structured systematic review model.³⁵ The key elements of this model are that the research methods of the systematic review are reproducible and transparent.³⁵ Other organizations that are producing evidence-based synthesis are the Agency for Healthcare Research and Quality (ARHQ)³⁶ in the United States and The Joanna Briggs Institute (JBI)³⁷ based in Australia.³⁵

The JBI model of evidence-based healthcare (EBHC) sees evidence in broader terms than just that of evidence derived from randomized controlled trials.^{2, 38}

The JBI model of EBHC has four components which includes evidence that has

been generated, synthesized, transferred and utilized.³⁸ The JBI model of EBHC recognizes that while the effectiveness of various interventions are necessary it is also evident that consumers and health professionals require more than just quantitative evidence such as that from randomized controlled trials.³⁹ The JBI model of EBHC recognizes that a range of information is needed in order to facilitate changes in practice for informed decision-making. The JBI model of EBHC has identified the need to encompass change that recognizes not only effectiveness but also that of the feasibility, appropriateness, and meaningfulness of an intervention.³⁸ Pearson (2007) describes feasibility as the extent to which an activity is practical and practicable. Appropriateness is the extent to which an intervention can fit into any given situation and meaningfulness is the degree to which an intervention is a positive experience for the patient.³⁸

A series of articles produced by the JBI titled 'systematic reviews step by step' described systematic reviews as needing to have:^{34, 40-44}

- Clearly stated objectives and questions that need to be addressed.
- Inclusion and exclusion criteria that define the eligibility of studies and that the criteria that have been previously specified in a protocol.
- A complete and comprehensive search that will identify all of the relevant studies including unpublished and published studies.
- An assessment of the included studies and their quality, an evaluation of the validity of their results and reporting on any exclusions that have based on quality.^{34, 40-44}

In recent years, systematic review methodology has evolved to include the synthesis of qualitative findings.⁴⁵ While qualitative synthesis, and quantitative synthesis have many parallels, there are distinctly different approaches between them.⁴⁶ Qualitative research synthesis proposes new understandings of a research question by bringing together the rich and comprehensive findings of individual qualitative research studies.⁴⁷

Qualitative research meta-synthesis can be conducted using several methodologies.⁴⁵ Systematic reviews are designed to inform policy and practice so it is important to select a methodology that will attempt to produce the kind of conclusions needed. Approaches that try to do this provide a more easily translatable message for those policy makers and practitioners who are using the evidence generated from the systematic review.⁴⁶ Some of the methods for synthesizing qualitative research include meta-ethnography, grounded theory, and meta-aggregation.

Meta-ethnography is a method of synthesizing qualitative research.

Ethnography has been described as the study of particular human cultures.

Ethnography is pertinent to healthcare. Ethnography can look into how health care can be swayed by the culture of the patient or how the ethnocentric beliefs of the healthcare workers may impede care.⁴

Noblit described meta-ethnography as having seven stages:⁴⁸

- Deciding on the focus of the synthesis.
- Selecting relevant studies to synthesize.
- Reading and re-reading the studies and establishing themes and concepts.

- Forming an idea of how studies are related by comparing the ideas and themes.
- Translating the studies into one another.
- Synthesizing translations if there are standard interpretations or if some of the concepts can incorporate those from other studies.
- Communicating the synthesis to the reader.⁴⁸

Grounded theory is a method of qualitative synthesis that was developed by Glaser and Strauss in the 1960's.⁴⁹ The purpose of grounded theory is to develop a theory about phenomena of interest. At the core of grounded theory is the data analysis process.⁴⁹

Meta-aggregation is a method of qualitative synthesis that accurately represents the process of a quantitative review but upholds the traditional process and requirements of undertaking a quantitative review.² Meta-aggregation aggregates the findings from a qualitative systematic review into a combined whole which is more than the sum of the individual outcomes.² Meta-aggregation has its origins in the health sciences. Its history is grounded in philosophic viewpoints that fit in well with evidence that needs to live up to expectations that inform healthcare decision-making.⁵⁰ Hannes (2011) states that meta-aggregation is particularly aligned with pragmatism as it endeavors to use the findings from research in a practical and useable way.⁵⁰ A pragmatic approach is an idea or proposition that if it is true, works satisfactorily, and that the meaning of the proposition is to be found in the practical consequences of accepting it, and that unpractical ideas are to be rejected.⁵¹

1.6 The methodological basis of the synthesis

The methodology that was used for the systematic review that underpins this thesis was from a qualitative approach using meta-aggregation.

In 2001, the JBI instigated a project along with other qualitative researchers from Australian universities to explore a systematic way of extracting and synthesizing qualitative research data which could be considered equivalent to the rigorous methods applied to randomized controlled trials and other quantitative research. The result of this project was the meta-aggregative approach.⁵⁰ Meta-aggregation aggregates findings into a collective whole that is more than the sum of separate findings.² Essentially, the process of meta-aggregation involves three phases; collecting the findings of the studies, bringing them together through further aggregation which are based on similarity of meaning, and arriving at a stage of having a set of synthesized statements which can be used to inform practice and policy.⁵⁰

The JBI method of conducting a systematic review uses the Qualitative Assessment and Review Instrument (QARI).² JBI-QARI is a software program that is used, and designed, to manage, evaluate, analyze and synthesize the findings from research studies that use a qualitative approach as part of a systematic review of evidence.⁵² JBI-QARI facilitates the extraction of findings into categories and the categories into synthesized findings. This tool allowed the extraction of similar types of information from each of the studies included in the systematic review. The tool was also used to assist in assessing the overall quality of the studies included in the systematic review that underpins this thesis. The JBI System for Unified Management, Assessment and Review of

Information (SUMARI) manual was used to assist in summarizing the findings in the included studies.⁵²

1.7 Definition of terms

Some of the terms that are used in this thesis are explained further in this section.

Pro re nata medication, PRN medication, “as needed” medication and “as required” medication - are all terms that mean medication that is given as needed as opposed to regularly prescribed medications that are given at regular times. These medications are often given as an adjunct to regularly prescribed medications in mental health care settings. These medications are prescribed by a Medical Officer and are given as long as the specifications for their administration have been met.⁵

Mental health is a state of well-being in which an individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and can contribute to his or her community.⁵³

Mental disorders comprise a broad range of problems with different symptoms. They are, however, generally characterized by some combination of abnormal thoughts, emotions, behaviors and relationships with others.⁵³

A mental health professional - has been described as a person who offers their services with the objective of attempting to improve an individual's mental health or to treat mental illness. These professionals include psychiatrists, psychiatric nurses, psychologists, social workers and occupational therapists.⁵⁴

Inpatients are patients who require a stay in a hospital. As opposed to an outpatient.⁴

A *voluntary patient* as described by the South Australian Mental Health Act 2009²² is defined as:

- 1) “a person may be admitted to a treatment centre at his or her request”.
- 2) “a person who is admitted as a voluntary patient into a treatment centre may leave the centre at any time unless an inpatient treatment order then applies to the person”.²² (pg. 11)

An *involuntary patient* is described as a patient who is subject to an inpatient treatment order. This means an involuntary patient may be admitted to a treatment centre and receive treatment for a mental illness without their consent if authorized by a Psychiatrist, an authorized medical practitioner or a medical practitioner who has examined the patient.²² The medical officer must determine that:

“the person has a mental illness”²² and;

“because of the mental illness, the person requires treatment for their own protection from harm or for the protection from harm for others including harm involved in the continuation or deterioration of the persons condition”²² and;

“there is no less restrictive means than an inpatient treatment order of ensuring appropriate treatment of the persons illness”.²² (p. 17-18).

1.8 Conclusion

Chapter 1 introduced the topic of PRN medication and its use by mental health professionals' and patients' in acute adult mental health care settings. The global research on this topic has highlighted the importance in understanding the issues described by those participants involved in this research. The overall structure of the thesis has been outlined, and definitions that are commonly used in this research have been explained. The issues highlighted when situating this study enable the reader to understand the common experiences of the participants as well as a greater understanding of the use of PRN medication in acute mental health care settings. The next chapter will introduce the systematic review protocol. The systematic review protocol describes the methods for conducting the qualitative systematic review that underpins the thesis.

Chapter 2: The systematic review protocol

2.1 Introduction

This chapter outlines the protocol for the systematic review on which this thesis is based. A systematic review protocol is developed before conducting a systematic review, and clearly describes the objectives and outlines the methods to be undertaken.² A protocol is a systematic approach to the manner in which the review is undertaken and allows transparency in its process. In turn, this enables the reader to see how the findings and the recommendations were generated.²

The following is a reproduction of the protocol¹ that has been published in the JBI Database of Systematic Reviews and Implementation Reports. The protocol is structured according to the requirements of the journal and is in future tense as it was written before undertaking the systematic review.

2.2 The Protocol

The experiences of mental health professionals and patients in the use of *pro re nata* medication in acute adult mental health care settings: a systematic review protocol of qualitative evidence.

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Review question/objective

The objective of this review is to synthesize the best available qualitative evidence on the experiences of mental health professionals and patients with the use of *pro re nata* (PRN) medication in acute mental health care settings. More specifically, the review question is: what do mental health professionals experience when they administer or prescribe PRN medications and what do patients who receive these PRN medications experience?

Background

Pro re nata medication means "when necessary" from the Latin phrase *pro re nata* which means for an occasion that has arisen, as circumstances require, as needed.⁴ The most common types of PRN medications administered by mental health professionals in acute mental health care settings are psychotropic medications. The word "psychotropic" comes from the Greek word *psycho* which has a combined meaning of psyche, which indicates the mind, soul or spirit, as opposed to the body,⁴ and *tropo* or *tropos*, the Greek word which means turning, hence, "what turns the mind".⁶ Psychotropic medications affect chemical levels in the brain which can affect mood, perception, and behavior.⁶

When a medical officer writes an order for PRN medication, they will write an order for one or more medications to be given to the patient at the mental health professional's discretion. This is providing that the documented specifications for administration are met.⁵ The documented specifications on the medication chart are specifically about the dose of medication and the circumstances under

which the medication should be given. The reasoning behind this is that by having these medications available to use at times when a patient is acutely unwell, agitation or violence in the acute mental health setting may be prevented or contained without having to call a medical officer to prescribe medication.⁵

There has been a considerable number of studies conducted on the use of PRN medication in acute mental health care settings. The authors of a quantitative Cochrane systematic review compared "as required" medication regimens with regular medication regimens for severely mentally ill people in the hospital.⁵⁵ Twenty-two papers were included in the review. Some of the papers included reported that PRN medication was used comprehensively in psychiatric facilities to manage patients who were suffering agitation or who were disturbed or distressed.⁵⁵ Twenty-three percent of inpatients in mental health facilities were found to have had at least one PRN dose of medication during their hospital stay.⁵⁶ A total of 50% of patients in secure mental health care received PRN medication while admitted.⁵⁷ Once PRN medication is prescribed, it is regularly administered, sometimes up to 10 times per patient and most of these in the four days within admission.⁵⁸ The authors of the Cochrane systematic review found that although the practice of using PRN medication is standard practice, there was no evidence found from the review that PRN use was the best way of dealing with agitation among those mental health patients when compared to regular doses of medication.⁵⁵

While the Cochrane systematic review examined the effectiveness of PRN medication for seriously mentally ill people, Baker et al.⁵⁹ conducted a best evidence synthesis on drug use/administration of PRN medication in mental

health wards. Best evidence synthesis involves the analysis of quantitative papers, supplemented by a review of the broader literature that may result in qualitative analysis.⁵⁹ Baker's synthesis found that psychotropic PRN administration was wide-ranging and that there were many factors involved in determining administration.⁵⁹ Baker highlighted the need to understand the clinical decision making around this practice. He found that practice varied widely.⁵⁹ Baker's research highlighted some of the areas around administration of PRN medication, including the frequency of when it was given, how often it was given in a 24 hour period, what was administered by what route, and what the effects and side-effects of the medications were.⁵⁹

Some additional research conducted on the use of PRN medication includes retrospective studies in which case notes were audited, and administration practices were examined.^{8, 60} Additional studies have looked at antecedents to PRN administration, activities to reduce PRN medication administration and literature reviews.⁶¹⁻⁶³

Much of the research conducted on the administration of PRN medication within mental health care settings has focused on quantitative research and from only the perspective of the nurse. The patient's experience of PRN medication use in adult acute mental health care settings is an area that is lacking in understanding, as few studies have explored the administration of PRN medication from a patient's perspective. Research by Baker et al. into service users' experiences of "as needed" medication concluded that service users or patients found that PRN medications were useful, but they appeared to have only a limited understanding of the use of PRN medication and possible alternatives to its use.⁶⁴ Baker et al. also reported that the process around the

use of PRN medication could be stigmatizing and confusing and that nurses should provide the patients with information about PRN medication as well as any other treatment choices.⁶⁴ Further research by Cleary et al. into patients' views and experiences of PRN medication found that the majority of patients were able to talk about at least one use of PRN medication that provided relief for them. Cleary et al. found that from the patients' perspective, interactions with patients around the immediate administration of PRN medication were inadequate.⁶⁵

Gaining an understanding of mental health professionals' and patients' use of PRN medications is important as the literature shows that there are many variables in the administration of PRN medication in acute adult mental health care settings. Understanding how a patient feels about this practice and understanding how mental health professionals make decisions around this practice are also important.

The aim of this systematic review is to provide a deeper understanding of the circumstances and factors that influence a mental health professional and their use of PRN medication. This systematic review will endeavor to locate evidence of the use of PRN medications by mental health professionals including the clinical decision-making process when administering and prescribing PRN medication. This review will also endeavor to find evidence of patients' understanding and viewpoints on the use of PRN medication. A search of the Joanna Briggs Institute Database of Systematic Reviews and Implementations Reports, CINAHL and PubMed databases did not find any current or planned reviews on this topic.

Keywords

Mental health nurses; qualitative; PRN medication; *pro re nata* medication; phenomenology

Inclusion criteria

Types of participants

This review will consider studies that include mental health professionals working in an acute adult mental health care setting who prescribe and administer PRN medications as well as adults admitted to an acute adult mental health care setting.

Phenomena of interest

This review will consider studies that investigate mental health professionals' and patients' experiences in the use of PRN medication.

Context

The context for the review is acute adult inpatient mental health care settings. These settings are usually within public health systems or private mental health settings.

Types of studies

This review will consider English language studies only that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research.

Search strategy

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of MEDLINE and CINAHL will be undertaken followed by an analysis of the text words

contained in the title and abstract, and of the index terms used to describe the articles. A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles will be searched for additional studies. Studies published in the English language will be considered for inclusion in this review. Studies published prior to the commencement of this protocol, prior to April 2014, will be considered for inclusion in this review.

The databases to be searched include:

CINAHL PubMed Embase Scopus PsycINFO

The search for unpublished studies will include: ProQuest Dissertations and Theses

Mednar Google Scholar (Appendix I Detailed Search Strategy).

Initial keywords to be used will be:

Nursing OR nursing staff OR nurses OR nurse OR clinician OR mental health nurses

AND *Pro Re Nata*, OR clinical decision-making OR PRN medication OR medication administration AND Mental health AND Qualitative OR qualitative and experience OR lived experience OR perception OR perceived OR understanding OR ethnography OR phenomenology OR feminist and research OR critical and research OR action and research OR systematic review

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical

appraisal instruments from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) (Appendix II Critical Appraisal Instrument). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Data extraction

Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-QARI (Appendix III Data Extraction Instrument). The data extracted will include specific details about the phenomena of interest, populations, study methods and outcomes of significance to the review question and specific objectives. For any missing information, the primary author of papers will be contacted.

Data synthesis

Qualitative research findings will, where possible, be pooled using JBI-QARI. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings rated according to their quality, and categorizing these findings on the basis of similarity in meaning. These categories are then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

Conflicts of interest

The authors declare that there are no conflicts of interest.

Acknowledgements

As this systematic review forms partial submission for the degree award of Masters of Clinical Science, a secondary reviewer will assist in critical appraisal, and the author would like to acknowledge the input of the secondary reviewer.

For consistency, the references and appendices from this reproduction of the published protocol are incorporated into the references and appendices at the end of this thesis.

2.3 Conclusion

Chapter 2 is a reproduction of the protocol that preceded the systematic review. This protocol facilitated a structured and transparent approach to the conduct of the systematic review.

Chapter 3: Results

3.1 Introduction

This chapter examined the results from the systematic review titled “The experiences of mental health professionals and patients in the use of *pro re nata* (PRN) medication in acute adult mental health care settings.” The systematic review generated five synthesized findings. This chapter outlines each of the steps followed in undertaking the systematic review. Those measures included the search and selection strategy resulting in the four studies that were included in the systematic review. The search and selection strategy has been illustrated with a flow diagram. A description of each of the studies has been incorporated. The methodological quality of the papers is discussed. A table has been included which shows the final critical appraisal assessment.

The chapter outlines the findings that were identified from the studies and the grouping of those findings into categories. The final process of the grouping of the categories into the synthesized findings is demonstrated. Tables which illustrate this process are included. A summary of findings table which grades the findings according to the ConQual⁶⁶ approach is also included.

3.2 Search strategy and study selection

A comprehensive search of the literature using the electronic databases CINAHL, PubMed, Embase, Scopus and PsycINFO found 410 citations.

Duplicates were removed (n=10) leaving a total of 400 citations. A grey literature search of Google Scholar, Mednar and Pro Quest Dissertations and Theses found an additional 510 citations. Duplicates were removed (n=7) leaving a total of 503 citations.

In total 903 papers were identified through both the electronic databases and grey literature searches. A total of five potential papers were identified for inclusion in the review and retrieved for full-text screening. One paper was excluded at this stage as it did not meet the inclusion criteria leaving a total of four papers. The excluded study can be found in Appendix IV. All four paper were assessed for methodological quality and included in the review. The characteristics of included studies are described in more detail in Appendix V. Please refer to the PRISMA⁶⁷ flow chart (Figure 1).

Literature search flow diagram

PRISMA 2009 Flow Diagram

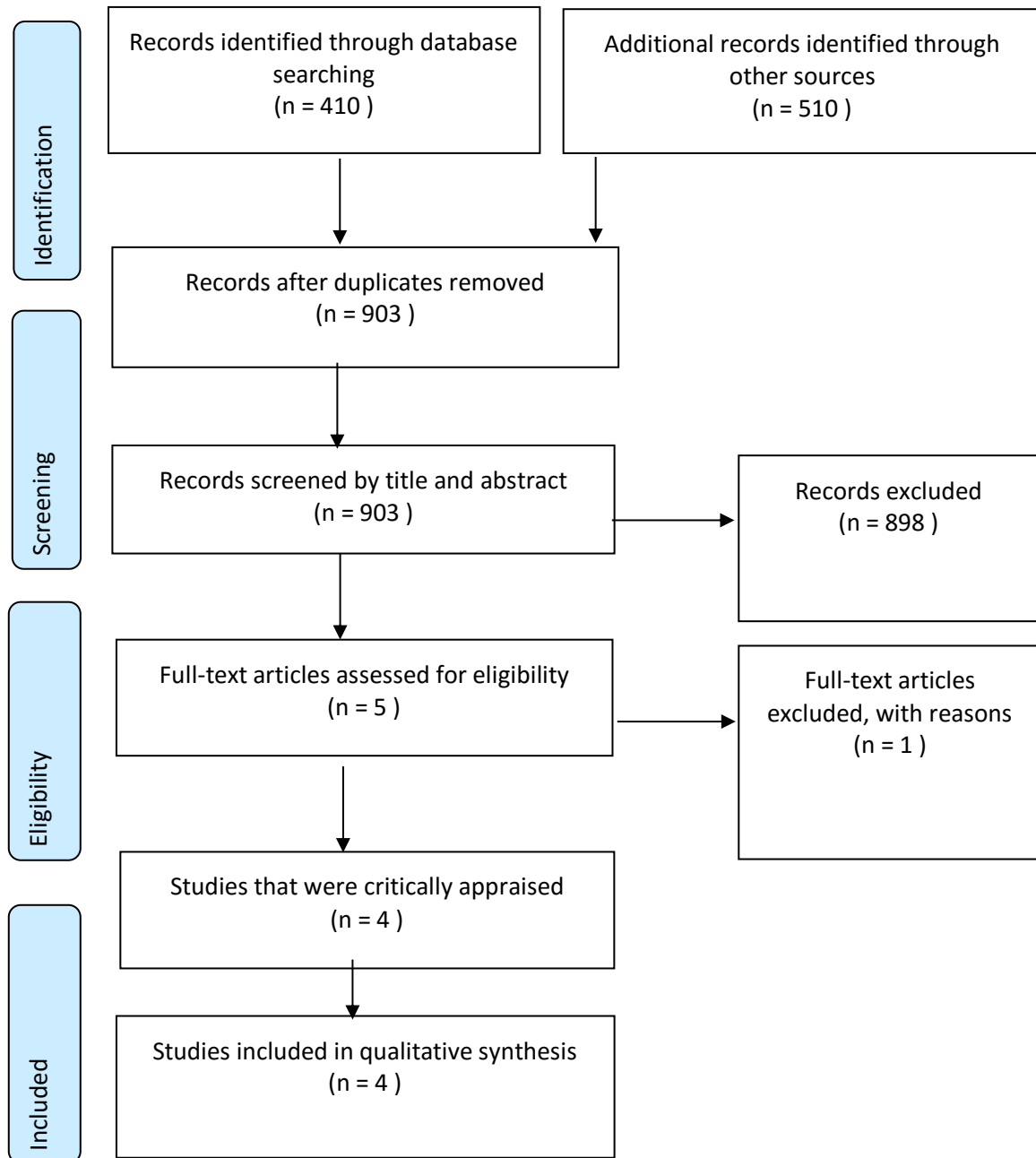


Figure 1. Flow chart of literature search and selection process.⁶⁷

3.3 Description of studies

The systematic review included a total of four studies. Two of the studies were about the experiences from the patients' perspective, and two of the studies were about the experiences from the mental health professionals' perspective.

A description of each included study is presented below followed by an overall description of the studies.

3.3.1 Study 1

Baker 2006: Service users' experiences of 'as needed' psychotropic medications in acute mental health care settings.⁶⁴

This qualitative research into service users' experiences of 'as needed' psychotropic medications in acute mental health care settings was set in three mental health units in Greater Manchester, the United Kingdom. A convenience sample of twenty-two inpatients participated in the study. The research was undertaken from a phenomenological perspective. Semi-structured interviews using open-ended questions aimed at exploring the participant's inpatient views and experiences of 'as needed' psychotropic medication in acute mental health settings. The data was analyzed using thematic content analysis.⁶⁴

3.3.2 Study 2

Baker 2007: Mental health professionals' psychotropic *pro re nata* (PRN) medication practices in acute inpatient mental health care: A qualitative study.¹⁵

This qualitative study of mental health professionals' psychotropic PRN medication practices in acute inpatient mental health care was set in acute

mental health care settings over four sites in three mental health trusts in a large city in the North West of England. A convenience sample of fifty-nine mental health professionals participated in the study. The participants were mental health professionals who were employed in acute inpatient mental health care settings and were involved in dispensing, administering and prescribing PRN psychotropic medications. These participants included doctors, nurses, and pharmacists. The research was undertaken from a phenomenological perspective. Semi-structured interviews were used to gather data about the participants experiences and views on PRN medication use. Thematic content analysis was used to analyze data.¹⁵

3.3.3 Study 3

Cleary 2012: Patients' views and experiences of *pro re nata* medication in acute mental health settings.⁶⁵

This qualitative research about patients' views and experiences of PRN medication in acute mental health settings were set in an acute mental health unit in Sydney, Australia. Forty inpatients in acute mental health settings were interviewed regarding their experiences of, and views about, receiving PRN medication. The aim of the research was to uncover contemporary insights into the views of the patients about their PRN medication. The research was undertaken from a phenomenological perspective. Semi-structured interviews were used to collect the data. Data was analyzed using thematic analysis.⁶⁵

3.3.4 Study 4

Usher 2009: Clinical decision-making for 'as needed' medications in mental health care.⁶⁸

This qualitative research about the clinical decision-making for 'as needed' medications in mental health care was set in three mental health care sites (acute, secure and rehabilitation) in two regional centers in Queensland, Australia. The participants were nineteen medical and nursing staff. The research was undertaken from a phenomenological perspective. Semi-structured interviews were used to explore the participant's decision-making surrounding the administration of PRN medication. The data was analyzed using thematic content analysis.⁶⁸

In summary, two of the studies were about the patients' experiences of PRN medication use and two of the studies were about the mental health professionals' experiences of PRN medication use. All of the studies were undertaken in acute mental health care settings with one of those studies across acute, secure and rehabilitation settings. Two of the studies were conducted in Australia, and two of the studies were conducted in the United Kingdom (UK). Each of the studies were carried out in multiple sites.

All four of the studies used semi-structured interviews to gather the data. The researchers sought to understand the patients' views and experiences by using open-ended questions as well as attempting to uncover contemporary insights into the views of the patients about their PRN medication. The mental health

professionals' views and experiences around PRN medication use were explored as well as the clinical decision-making around PRN medication use.

The participants in the studies were taken from convenience samples. Patients were invited to participate and expressed their interest in taking part. The mental health professionals who participated in the studies came from different disciplines but were predominantly medical and nursing staff. All four of the studies were analyzed using thematic content analysis.

3.4 Methodological Quality

All four studies that were included in the review did not state the philosophical perspective, and hence an unclear conclusion was drawn on this aspect of the assessment. It was evident however, that each of the studies examined the subjective experiences of the participants involved. The researchers for each of the studies endeavored to understand the viewpoint of those participants and the studies appeared to come from a phenomenological perspective. The congruity between the research question and methodology was clear in all four studies. There was congruity between the research methodology and the methods (semi-structured interviews) which were used to collect data in all four studies. Three of the studies showed clear congruity between the research methodology and the representation and analysis of data. One paper was assessed as unclear on this question as it was unable to be determined whether all of the participant's voices were represented in the data.⁶⁵ There were no statements in any of the four studies about locating the researchers culturally or theoretically. All four studies were deemed unclear about the influence of the

researcher on the research and vice-versa. The participant's voices were adequately represented in three papers. The remaining included paper did not use participants' quotes to support their findings although their voices were represented in the analysis through description.⁶⁵

All four included studies demonstrated congruity between the research methodology and the interpretation of results; that the research was ethical and that the conclusions drawn from the research report flowed from the analysis, or interpretation, of the data.

Table 1 shows the critical appraisal results for each of the papers included in the review.

Table 1: Final Critical Appraisal Assessment

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Baker, J. A., Lovell, K., Easton, K., Harris, N., 2006	U	Y	Y	Y	Y	U	U	Y	Y	Y
Cleary, M., Horsfall, J., Jackson, D., O'Hara-Aarons, M., Hunt, G. E., 2012	U	Y	Y	Y	Y	U	U	N	Y	Y
Baker, John Anthony, Lovell, Karina, Harris, Neil, 2007	U	Y	Y	Y	Y	U	U	Y	Y	Y
Usher, Kim, Baker, John A., Holmes, Colin, Stocks, Belinda, 2009	U	Y	Y	U	Y	U	U	Y	Y	Y
%	0.00	100.00	100.00	75.00	100.00	0.00	0.00	75.00	100.00	100.00

3.5 Findings from the Systematic Review

Findings extracted from the four included studies were not separately analyzed according to the participant's voice (e.g. whether it was the patient's voice or that of the mental health professional). Findings were instead interpreted according to the similarities of each particular theme that arose. Analyzing the participant's voices in this way enabled an opportunity to understand the broader picture surrounding PRN medication use and demonstrated where patients and mental health professionals' views and experiences align or differ.

A total of 40 findings relevant to the phenomena of interest were extracted from the included studies. From these findings, 13 were classified as unequivocal and 27 as equivocal. A complete list of findings and the corresponding

illustration/s are included in this chapter. To enable some clarity the patients experiences have been italicized. These findings were then grouped according to similarity into ten categories. These ten categories were further analyzed resulting in the generation of five synthesized findings. The results of this synthesis are presented below.

The presentation is organized by the synthesized findings that were generated from the systematic review. A detailed description of the synthesized finding and the categories included within the synthesized finding are provided. Represented under each category are the findings and illustrations that support the synthesis.

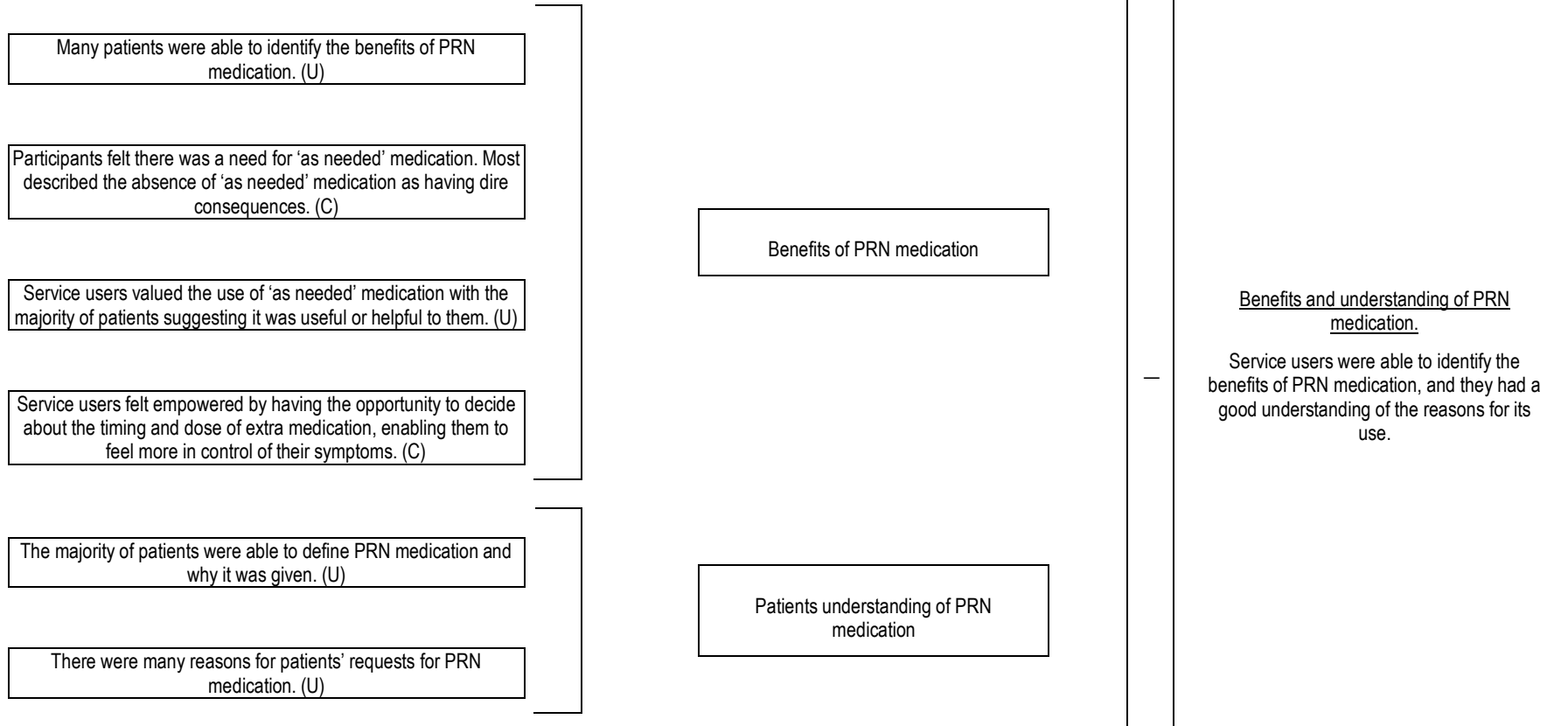
3.5.1 SYNTHESIZED FINDING 1: Benefits and understanding of PRN medication

Service users were able to identify the benefits of PRN medication, and they had a good understanding of the reasons for its use.

This synthesized finding demonstrated that many patients were able to identify the benefits of PRN medication and that the participants believed that there was a need for them. The majority of patients were able to define PRN and why it was given. The patients described PRN medication as being useful, helpful and being valuable to them. Some of the stated benefits were that PRN medication could relieve anxiety, assist with sleep and ameliorate hallucinations or delusions. The patients felt empowered by the opportunity to decide on the timing and the dose of PRN medication which gave them more control of their symptoms.

This first synthesized finding was derived from two categories underpinned by a total of six findings. A summary of the categories is provided below, together with the findings and illustrations that support them. The first synthesized finding can be seen in Table 2.

Table 2: Synthesis 1: Benefits and understanding of PRN medication



Category 1 - Benefits of PRN

This category was developed from four findings derived from two studies.^{64, 65}

Findings from the review demonstrated that patients find PRN medication useful to them for a range of reasons, including, helping them feel more in control of their symptoms. Patients felt that having PRN medication as an option was valuable. They described being empowered by having the opportunity to be able to take control and to manage their symptoms. The views of the participants about the benefits of PRN medication are highlighted in the following illustrations.

Finding: Many patients were able to identify the benefits of PRN medication.

Illustration: *Eighty percent of patients were able to identify benefits of PRN medication, and these were relieved anxiety or panic, enabled sleep, ameliorated hallucinations or delusions, decreased agitation or restlessness and relieved psychotropic medication side-effects; one patient identified PRN for pain relief (p. 536).*⁶⁵

Finding: Participants felt there was a need for 'as needed' medication. Most described the absence of 'as needed' medication as having dire consequences.

Illustration: *"I think everyone would be running around like a mad bull" (p. 359).*⁶⁴

Finding: Service users valued the use of 'as needed' medication with the majority of patients suggesting it was useful or helpful to them.

Illustrations: *"It is valuable – it is valuable to us as mental health patients" (p. 357).*⁶⁴

When you are quite poorly and feeling bad, your mind just will not shut up, and if you can shut your mind for a while, that is part of the healing process. I think these types of drugs they give you now do that (p. 357).⁶⁴

Finding: Service users felt empowered by having the opportunity to decide on the timing and dose of extra medication, enabling them to feel more in control of their symptoms.

Illustration: *“When I felt obviously my body needed something to boost my coping capabilities, I have been able to ask for it rather than it is given at 2 o’clock. Yes having the control has made me feel a lot more happy and comfortable” (p. 357).⁶⁴*

Category 2 - Patients understanding of PRN medication

This category demonstrates that patients had a good understanding of what PRN medication was and how it could help them. Many of the patients were able to define what PRN medication was and how it could assist them. This category was comprised from two findings derived from one study.⁶⁵ The patients understanding about PRN medication is highlighted in the illustrations below.

Finding: The majority of patients were able to define PRN medication and why it was given.

Illustrations: *Overall, approximately two-thirds of interviewees were able to define PRN medication (p. 535).⁶⁵*

Seventy per cent stated they knew why PRN was given (p. 535).⁶⁵

Seventy percent of respondents said they received PRN medication for their mental illness, twenty percent to assist with sleep, three interviewees for side-effects of psychotropic medication and one patient nominated PRN medication only for pain relief (p. 535).⁶⁵

Finding: There were many reasons for patients' requests for PRN medication.

Illustrations: *Most patients gave more than one reason for their request for PRN medication, and reasons included anxiety, sleep, relief of psychotropic side-effects, pain, agitation, hallucinations, mania and panic (p. 536).⁶⁵*

When asked if they had ever sought PRN medication when it was not required, ten percent said 'yes'; two because they were bored, one wanted to alter his/her consciousness, and one was withdrawing from methamphetamine ('ice') (p.536).⁶⁵

3.5.2 SYNTHESIZED FINDING 2: Lack of education

Patients believed that there was a lack of education provided to them about PRN medication. They described many alternatives to the use of PRN medication.

This synthesized finding demonstrates that patients believed that they were not provided with adequate education about PRN medication and that there were alternatives to its use. Patients thought that prolonged use may prohibit the use of other coping strategies or lead to dependency. Patients had many suggestions for alternatives to PRN medication. Some of their suggestions included going for a walk, distraction techniques or having some time out.

Although patients had identified alternatives they also felt that there was a lack of support or opportunity to use them. Patients felt that nurses were a distant source of support for helping them develop alternative strategies to their reliance on PRN medications. Patients indicated that there was a lack of education around PRN medication, and a large number described a perceived lack of control, fear of the unknown, anger or a belief that they had little choice except to put up with it. Some patients described not understanding what PRN medication was for or why it was given. Other patients mentioned that medication (not specifically PRN) was given against their will, or they took it because it was offered. Only limited education was provided to patients about PRN medication. One mental health professional was not convinced that the patients were fully aware, or educated, about taking PRN medication.

This second synthesized finding was derived from two categories underpinned by a total of eight findings. A summary of the categories is provided below, together with the findings and illustrations that support them. The second synthesized finding can be seen in Table 3.

Table 3: Synthesis 2: Lack of education about PRN medication

Participants suggested that prolonged use of 'as needed' medication could prohibit the use of other coping strategies or lead to dependency. (C)

Patients believed that there were alternatives to giving PRN medication. (U)

Patients identified alternatives to 'as needed' medication, however, few had tried these due to lack of support or opportunity to use them. Nurses were seen as an important, but a distant source of support for the development of alternative strategies to prevent reliance on 'as needed' medication. (C)

A large number of patients considered that they did not receive all of the relevant facts about the PRN medication and that this impacted on them in numerous ways. (C)

Not all patients understood what PRN medication was for and why it was given. (C)

Only limited information was provided to patients about their PRN psychotropic medications. (C)

Patients believed that Nurses could improve their actions regarding PRN medication. (U)

Service users' indicated a lack of education about their 'as needed' medication. (C)

Alternatives to 'as needed' medication

Education

Lack of education about PRN

Patients believed that there was a lack of education provided to them about PRN medication. They described many alternatives to the use of PRN medication

Category 3 - Alternatives to “as needed” medication

This category showed that patients believed that there were alternatives to “as needed” or PRN medication. They were able to give suggestions for these and gave good reasons for their use. Patients identified alternatives to using PRN medication but felt there was a lack of opportunity or support to use them. This category was comprised of three findings derived from two studies.^{64, 65}

Participants views about alternatives to PRN medication are highlighted in the illustrations below.

Finding: Participants suggested that prolonged use of ‘as needed’ medication could prohibit the use of other coping strategies or lead to dependency.

Illustration: *“It’s a difficult one because when you are feeling quite poorly it does give quite a quick relief and perhaps then gives you the opportunity to recover. The downside of it is you become reliant on them and ask for them, perhaps when some other method like breathing exercises, diversion or going for a walk may have been the alternative. So you can become reliant on it. But I have to say, in fairness to all the hospitals I have been in, they are not given out like sweets” (p. 357).*⁶⁴

Finding: Patients believed that there were alternatives to giving PRN medication.

Illustrations: *There were 50 suggestions for alternatives to PRN medications offered by 30 interviewees. The most frequent suggestions were to go for a walk or outside; talk and/or distraction by staff, and go to a quiet place, meditate or take time out (p. 536).*⁶⁵

Less common alternatives were to pace their breathing, listen to music, smoke a cigarette or take a shower or bath (p. 536).⁶⁵

Finding: Patients identified alternatives to ‘as needed’ medication, however, few had tried these due to lack of support or opportunity to use them. Nurses were seen as an important, but a distant source of support for the development of alternative strategies to prevent reliance on ‘as needed’ medication.

Illustration: *“Yes my named nurse (primary nurse) has come up with a strategy on a little piece of paper, to relax, to help me to get to sleep. I have tried to follow that, and to be honest with you some parts require a bit of patience and I am not really a patient person. At the moment, this is not really working for me” (p. 359).⁶⁴*

Category 4 – Education

Service users indicated a lack of education about their “as needed” medication. Clear deficits in providing education was demonstrated in the findings and illustrations below. Patients believed that they did not receive all of the relevant facts about medication and that any information provided was limited. This category was comprised of five findings that were derived from three studies.^{15, 64, 65} Patients’ views about education around PRN medication are highlighted below.

Finding: A large number of patients considered that they did not receive all of the relevant facts about the PRN medication and that this impacted on them in numerous ways.

Illustration: *In response to this, participants described a range of emotions including perceived lack of control, fear of the unknown, anger or a belief that they had little choice but to put up with it (p. 536).⁶⁵*

Finding: Not all patients understood what PRN medication was for and why it was given.

Illustrations: *Three said that sometimes they knew, and at other times, they did not (p. 535).⁶⁵*

Nine either mentioned medication (not specifically PRN) was given against their will, or they took it because it is offered (p. 535).⁶⁵

Finding: Only limited information was provided to patients about their PRN psychotropic medications.

Illustrations: *“I am not convinced that all the time patients are fully aware or educated about the reasons for taking PRN.” (Ward Manager E) (p. 166).¹⁵*

“We won’t tell them the side-effects without them asking. It’s an experiential thing. I mean if we went through every possibility. You went through every side-effect that they were going to have. They are going to say I don’t want that” (Charge Nurse D) (p. 166).¹⁵

Finding: Patients believed that Nurses could improve their actions regarding PRN medication.

Illustration: *Half of the respondents made 27 suggestions about improving nursing actions regarding giving PRN medication. These included more medication information; written drug information and better communication,*

compassion and caring. Four believed that nurses should upgrade their knowledge about symptoms and/or medication, and two wanted more choices when deciding to take their medication (p. 536).⁶⁵

Finding: Service users' indicated a lack of education about their 'as needed' medication.

Illustrations: *"I just took it I didn't know what it was. She just gave us (me) a cup of water and said, 'Here you are, take this,' and then about 10, 15 minutes later I went back to bed and went to sleep" (p. 358).⁶⁴*

"I am not well up (informed) on the effects of different tablets. I have no idea I just trust the doctors" (p. 359).⁶⁴

3.5.3 SYNTHESIZED FINDING 3: Power and Control

There is a perception among patients that mental health professionals have the power over patients when it comes to the administration of PRN medication.

This synthesized finding demonstrates that patients' perceived mental health professionals to have the power and the control when it came to PRN medication and that there was a subgroup of nurses referred to as "the old school" who patients felt applied more power. Patients felt that nurse's interactions with them regarding PRN medication were inadequate. A large number of patients reported that they were told to take oral PRN medication or were threatened with an injection if they refused. A large number of patients said that their consent was not always gained. Some patients felt that consent was not necessary because they requested PRN themselves. A few patients felt

that consent was implied, and a few felt that consent had been sought. Patients described a wide range of negative emotions by refusals of PRN medication that they had requested. These were reported as feeling powerless, hopeless, demeaned, angry, frustrated, embarrassed and distressed. Patients indicated that noisy or aggressive patients were often given PRN medication to make them quiet. The patients felt that in their experience, this emphasized the control dynamic. Patients reported that the process around the use of PRN medication was confusing and stigmatizing. One patient felt that in their experience, medication should not be given in a public area, that it should be given in private and that it was not very professional of nurses to do this. Patients felt that staff have the power over them in regards to PRN medication because they can give it to you at will. A subgroup of nurses referred to as “the old school” were described as being more custodial and giving more PRN medication.

This third synthesized finding was derived from two categories underpinned by a total of eight findings. A summary of the categories is provided below, together with the findings and illustrations that support them. The third synthesized finding can be seen in Table 4.

Table 4: Synthesis 3: Power and control

Nurse's interactions with patients regarding PRN medication were inadequate. (C)

Participants expressed feeling angry, frustrated and embarrassed at refusals of medication that they had requested. (C)

Participants indicated that aggressive or noisy patients were often given medication to quieten them down, further emphasizing the control dynamic in user's experiences. (U)

Participants reported the process associated with the use of 'as needed' medication was confusing and stigmatizing. (C)

Staff have the power over the patients when it comes to PRN medication. (U)

There was a range of negative emotions described by patients when their request for PRN was refused. (C)

There was influence from the 'old school', a sub-group of staff who displayed custodial care and were more likely to administer 'as needed' medication. (C)

There was the impression that a subgroup of nurses 'the old school' administer more PRN medications. (C)

Power and control

The 'old school.'

Power and control.

There is a perception among patients that mental health professionals have the power over patients when it comes to administration of PRN medication.

Category 5 – Power and control

Patients believed that mental health professionals have the power over them when it comes to the administration of PRN medication. Patients expressed negative emotions because of this. This category comprised six findings derived from two studies.^{64, 65} Participants views related to power and control issues are highlighted in the illustrations below.

Finding: Nurses' interactions with patients regarding PRN medication were inadequate.

Illustrations: *Approximately half of the respondents were told to take the medication or were threatened with an injection if oral PRN was refused (p. 536).*⁶⁵

*When asked if nurses specifically gained consent for PRN medication, approximately three-quarters of respondents stated 'no'; five said formal consent was unnecessary, as they always requested PRN themselves; three deemed the discussion involved implied consent on their behalf, and three considered their consent had been sought (p. 536).*⁶⁵

Finding: Participants expressed feeling angry, frustrated and embarrassed at refusals of medication that they had requested.

Illustrations: *"For a good half an hour after that (refusal) I got a lot worse, and that's when I said I feel (felt) threatened and paranoid and I lashed out – punched the walls, head butted the wardrobe" (p. 357).*⁶⁴

“It shouldn’t be called PRN (‘as needed’ medication), I know that. Cause it’s embarrassing when you ask for it, PRN (‘as needed’ medication), it’s horrible when you get rejected. You should take the patients aside, to stop the embarrassment” (p. 358).⁶⁴

Finding: Participants indicated that aggressive or noisy patients were often given medication to quieten them down, further emphasizing the control dynamic in users’ experiences.

Illustrations: *“I have seen patients getting injections when they are causing problems. I had it once myself. They just held me down and gave me an injection. I didn’t really want that, they should have asked me” (p. 358).⁶⁴*

“I’m sure they are given a little bit of extra (‘as needed’ medication) to quieten things down to make life healthy for everybody else, because it’s the snowball effect, isn’t it” (p. 358).⁶⁴

Finding: Participants reported the process associated with the use of ‘as needed’ medication was confusing and stigmatizing.

Illustration: *“I think that whatever happens when the medication is taken I think it should be taken to (in) the medicine room. I don’t think it’s right when, say, I was sat in the living room, watching the Simpsons on telly or something, I don’t think it’s right if the actual nursing staff come with the tablets and say, ‘Take this.’ I don’t think that’s very professional, it’s not private then” (p. 358).⁶⁴*

Finding: Staff have the power over the patients when it comes to PRN medication.

Illustrations: *“The staff have the power over the patients, mainly to do with PRN (‘as needed’ medication) because they can give it you at will” (p. 357).⁶⁴*

“It’s not prescribed at a certain time to actually give it to you. So they can just do it (give it) whenever they feel like. They have too much power” (p. 357).⁶⁴

I see many, many times people asking for it and not getting it. It seems to be when you ask for it, you don’t get it, when you don’t want it, you get it (p. 357).⁶⁴

Finding: There was a range of negative emotions described by patients when their request for PRN was refused.

Illustration: *These included powerlessness, hopelessness, feeling demeaned, frustration, anger, jitteriness, and distress (tears); one person described engaging in distraction techniques, such as taking a shower (p. 536).⁶⁵*

Category 6 – The ‘old school’

There was an impression that there was a subgroup of nurses ‘the old school’ who administered more PRN medication and who also displayed more custodial care. This category was comprised of two findings that were derived from two studies.^{15, 68} Evidence of this is highlighted in the illustrations below.

Finding: There was influence from the ‘old school’, a sub-group of staff who displayed custodial care and were more likely to administer ‘as needed’ medication.

Illustration: *“As I said to you right at the start, I am a hard man, I don’t deal with that, you abuse me, you get time out and a stab in the arse or whatever*

order it comes in...they (other patients) start to learn, after a period of time – don't ask him" (nurse 12 – acute) (p. 986).⁶⁸

Finding: There was the impression that a subgroup of nurses “the old school” administer more PRN medications.

Illustration: “You get it on nights. You get certain night nurses and the team know who they are. They say so and so are on tonight. It will be a quiet night then” (ward manager B) (p. 166).¹⁵

3.5.4 SYNTHESIZED FINDING 4: Prescribing and administering PRN medication

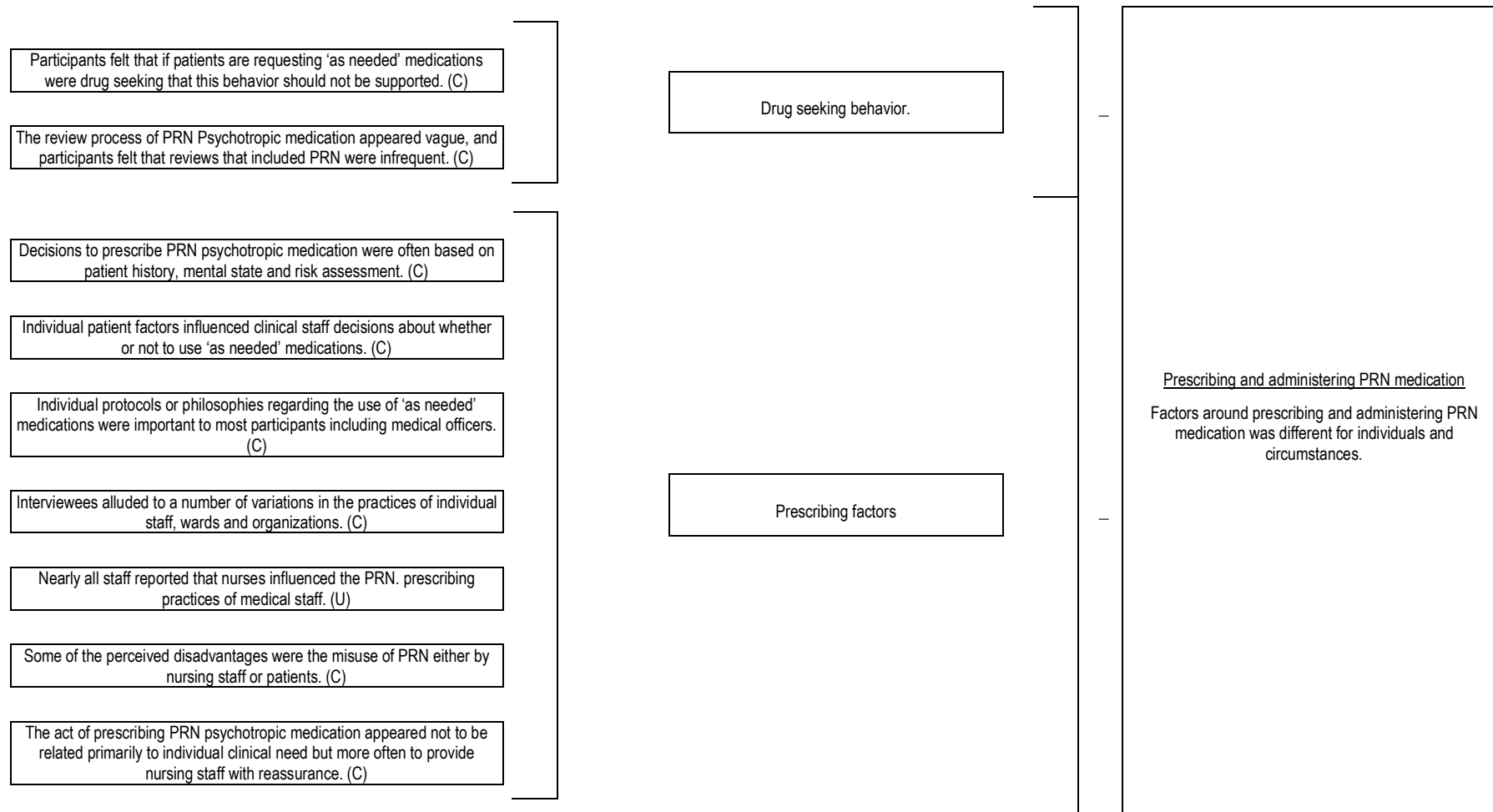
Factors around prescribing and administering PRN medication was different for individuals and circumstances.

This synthesized finding demonstrates that there are many variables around the experiences that mental health professionals have when prescribing and administering PRN medications. There were many factors that affected these practices. MHP's felt that drug-seeking behavior should not be supported and that medication reviews, including PRN medication, were too infrequent. Many prescribing and administration factors were described. A ward manager described a common practice of prescribing PRN medication before an assessment of a patient. MHPs described individual patient factors as influencing clinical staff decisions about whether to use PRN medication or not. Individual protocols and philosophies were important to most MHPs. Variations in the practice of individual staff, wards and organizations were described by a

ward manager. There was a belief that nurses could influence the PRN prescribing practices of the medical staff. Nurses described intrinsic dangers regarding the administration of PRN medication such as the risk of overmedicating somebody and that nurses may use PRN too quickly instead of trying other techniques. PRN medication was prescribed, at times, when it was not related primarily to individual clinical need but more to provide reassurance for nurses in case it was needed. One Consultant describing that prescribing on an as needs basis was not always possible.

This fourth synthesized finding was derived from two categories underpinned by a total of nine findings. A summary of the categories is provided below, together with the findings and illustrations that support them.

Table 5: Synthesis 4: Prescribing and administering PRN medication



Category 7 – Drug seeking behavior

Participants felt that drug seeking behavior should not be supported and that infrequent reviews of PRN medication orders could contribute to this. This category was comprised of two findings derived from two studies.^{15, 68}

Illustrations that describe this drug seeking behavior are highlighted below.

Finding: Participants felt that if patients are requesting ‘as needed’ medications, they were drug seeking, that this behavior should not be supported.

Illustration: “Some people are drug seeking...especially with things like diazepam...so it’s whether the patient is in severe distress or has a drug seeking habit because a lot of our patients have strong, large drug habit” (nurse 1 – secure unit) (p.984).⁶⁸

Finding: The review process of PRN psychotropic medication appeared vague, and participants felt that reviews that included PRN were infrequent.

Illustration: “They come up to the office and say ‘I haven’t had my Lorazepam.’ If they are talking about a time since they had their Lorazepam, they probably don’t need it. They probably want it” (Pharmacist A) (p. 166).¹⁵

Category 8 – Prescribing factors

There were many factors involved in the prescribing and administration of PRN medication. Prescribing and administration practices appeared to vary widely from individuals to organizations. This category was comprised of seven

findings derived from two studies.^{15, 68} Illustrations below give an insight into these practices.

Finding: Decisions to prescribe PRN psychotropic medication was often based on patient history, mental state, and risk assessment.

Illustrations: “When people are admitted it is still common practice to put lorazepam and haloperidol down without even an assessment. It’s just there because that’s what we do” (Ward Manager A) (p. 164).¹⁵

“You can bet the 23 patients we got in here, the majority are written up for PRN and it will all be lorazepam and haloperidol” (Nursing Assistant A) (p. 165).¹⁵

Finding: Individual patient factors influenced clinical staff decisions about whether or not to use ‘as needed’ medications.

Illustration: “They are psychotic, young, black men ... they are vastly over-represented in terms of the patients... they become combative, uncooperative” (Medical Officer – acute unit) (p. 986).⁶⁸

Finding: Individual protocols or philosophies regarding the use of ‘as needed’ medications were important to most participants including medical officers.

Illustrations: “I use PRN medication only if the patient needs it, not as a means of ...having the benefit of a quiet shift...if the patient is in distress, we should use it. Otherwise I don’t see the need for it” (Nurse 3 – secure unit) (p. 987).⁶⁸

“Sometimes people react...the opposite to benzodiazepines...if they ask for more antipsychotics like as in a PRN, I actually never do that because it’s

useless. You have to wait until the receptors are all blocked, and that takes a while, and the only thing you want is sedation” (Medical Officer – acute unit) (p. 987).⁶⁸

Finding: Interviewees alluded to a number of variations in the practices of individual staff, wards and organizations.

Illustration: “Now in ... where I worked previously if I had administered that dose of medication I would have been severely disciplined” (Ward Manager B) (p. 166).¹⁵

Finding: Nearly all staff reported that nurses influenced the PRN prescribing practices of medical staff.

Illustration: “I am not going to argue with too many of the consultants but some of the junior doctors, you may try to influence them on what the level (dose) they prescribe” (Staff Nurse D) (p. 165).¹⁵

Finding: Some of the perceived disadvantages were the misuse of PRN either by nursing staff or patients.

Illustrations: “I think there're inherent dangers in PRN because although it's prescribed by a doctor, the actual giving it is the nurse's decision. Nobody in this hospital would do that, but there could be a danger of overmedicating somebody” (Senior Staff Nurse B) (p. 164).¹⁵

“And there can also be a danger, where nursing staff could use it rather quickly, rather than using other alternative techniques” (Senior Staff Nurse C) (p. 164).¹⁵

Finding: The act of prescribing PRN psychotropic medication appeared not to be related primarily to individual clinical need but more often to provide nursing staff with reassurance.

Illustration: “They just feel unsafe, often they’ll say ‘the weekend’s coming up so can I have some such and such on the PRN side?’ and I think it helps them to feel that that’s there. Although at the back of my head I’m sometimes thinking ‘I would very much prefer to leave it, and if the patient needed it, they’d see the doctor, the S.H.O. (Senior House Officer), and then the S.H.O. would prescribe appropriately,’ but I think that’s not often possible” (Consultant B) (p. 166).¹⁵

3.5.5 SYNTHESIZED FINDING 5: Multiple factors influence the use of PRN medication by mental health professionals.

There is some unethical use of PRN medication by mental health professionals. Some of this is related to environmental factors

This synthesized finding demonstrates that there are multiple factors that influence the use of PRN medication. There are some unethical practices related to PRN medication use by mental health professionals. Environmental factors, such as staffing issues, were detailed as some of the factors that influenced this practice. An example described by a Psychiatrist was that a person who is screaming at you all of the time makes the tolerance of staff reduced, and in turn staff might be quicker to administer PRN medication. Issues relating to staffing levels were also described as a factor in administering PRN medication. Nurses described that being short staffed and busy as a reason that more PRN medication may be used with one nurse describing

administering PRN medication just to quieten the ward down. MHPs used PRN medication when preferable alternatives existed. Therapeutic time was seen as less important than PRN medication due to time constraints or administrative issues. Patients linked perceived resource limitations, particularly staffing, and failure to try alternative coping strategies implied that PRN medication was used instead of nurses spending therapeutic time with patients. One patient described nurses being too busy to sit and talk. There was an assumption that moving doctors from the process of PRN medication would lead to safer and improved care. An example being that it would be safer than having to wait for the doctor. Some unethical use of PRN medication use by mental health professionals was described. Nurses described giving medication for reasons other than what it was prescribed, and that PRN medication could be seen as an easy option. There were examples of PRN medication being administered punitively.

This fifth synthesized finding was derived from two categories underpinned by a total of nine findings. A summary of the categories is provided below, together with the findings and illustrations that support them. Synthesized finding five can be seen in Table 6.

Table 6: Synthesis 5: Multiple factors influence the use of PRN medication by mental health professionals

Environmental factors influenced decisions about whether to administer 'as needed' medication. (C)

Issues relating to staffing levels and skill mix were also proposed as reasons for higher levels of 'as needed' medication administration. (U)

Mental health professionals reported that PRN psychotropic medication had been used when preferable alternatives existed. (U)

Participants linked perceived resource limitations, particularly staffing, and failure to try alternative coping strategies, implying that 'as needed' medication was used instead of nurses spending therapeutic time with patients. (C)

There was an assumption that moving doctors from the process would lead to safer and improved care. (C)

Improvements in practice were identified. (C)

Mental health professionals used PRN medication for reasons other than the prescribed indication for use. (U)

Perceived abuse or unethical use of "as needed" medications concerned some participants. (U)

There appeared to be an aspect of PRN psychotropic administration that had a punitive element. (C)

Environmental factors

Unethical use of 'as needed' medication.

Multiple factors influence the use of PRN medication by mental health professionals.

There is some unethical use of PRN medication by mental health professionals. Some of this is related to environmental factors.

Category 9 – Environmental factors

Environmental factors such as staffing issues, inadequate skill mix or inexperienced staff can influence decisions to administer ‘as needed’ medication. Stressful situations and heavy workloads could affect the use of PRN medications by MHP’s. This category was comprised of five findings derived from three studies.^{15, 64, 68} Evidence that demonstrates this is seen in the illustrations below.

Finding: Environmental factors influenced decisions about whether to administer ‘as needed’ medication.

Illustrations: “You have a person screaming all the time or being in your face, which is really difficult for someone just to filter out, especially someone with psychosis...then the tolerance of the staff is a little bit less, and therefore they are quicker to administer diazepam, especially sedatives, to try and control further escalations” (Psychiatrist – acute unit) (p. 986).⁶⁸

“Someone was secluded, and that interrupted the whole environment and everyone became disturbed and someone was being restrained and another patient jumped in and tried to attack a member of staff...on that day there were nine patients who were PRNed because it affects the whole environment” (Nurse 3 – secure unit) (p. 986).⁶⁸

Finding: Issues relating to staffing levels and skill mix were also proposed as reasons for higher levels of ‘as needed’ medication administration.

Illustrations: “I suppose if you are short staffed, you’re busy, you don’t have time to stop something happening, you might give the PRN more regularly

without trying to take more time to see what is going on” (Nurse 1 – acute unit) (p. 986).⁶⁸

“The casual nurses, they don’t know the ward, they don’t know the medication, they are unaware of the patient and they don’t know the story behind it” (Nurse 3 – acute unit) (p. 986).⁶⁸

Finding: Mental health professionals reported that PRN psychotropic medication had been used when preferable alternatives existed.

Illustrations: “I would say during the day, yes, when the ward has been flat out, 100 miles an hour, you give that one (patient) 2 milligrams (lorazepam). Just really to sort of quieten them down, go out of the way, and relax. I think we’re all guilty of that, and we’d be lying if we said differently” (Staff Nurse F) (p. 165).¹⁵

“Sometimes it’s far easier to give someone a couple of tablets that makes them a bit more chilled out and calms them down and shuts them up, than actually spending that hour or so time with someone that they might need” (Staff Nurse G) (p. 165).¹⁵

“I think that sometimes it’s used; it can be used as an excuse not to engage in any real therapeutic dialogue with a patient” (Ward Manager C) (p. 165).¹⁵

“Therapeutic time is seen as less important than perhaps answering the phone or dealing with the next crisis” (Ward Manager D) (p.165).¹⁵

Finding: Participants linked perceived resource limitations, particularly staffing, and failure to try alternative coping strategies, implying that ‘as needed’ medication was used instead of nurses spending therapeutic time with patients.

Illustrations: “Well first and foremost it can’t be altered at this particular moment in time, due to the fact that it’s under-funded – the NHS. It’s understaffed, due to that, and they are throwing more and more paperwork. They can’t cope with what they have already got at the moment, so it’s only going to get worse before it gets better” (p. 359).⁶⁴

“I think they could sit down and have a chat with you, but they are too busy, and they are running around. They can only speak to you for a few seconds, you know, and that’s it. And you get yourself all worked up. They haven’t got the time to sit and talk to you properly” (p. 359).⁶⁴

Finding: There was an assumption that moving doctors from the process would lead to safer and improved care.

Illustrations: “It can be the nurse’s decision about medication. You don’t have to wait for the doctor. It’s safer than obviously waiting for a doctor to come up and prescribe the medication” (Senior Staff Nurse A) (p. 164).¹⁵

“You don’t have to bleep the doctor all the time to get things prescribed” (Senior House Officer) (p. 164).¹⁵

Category 10 - Unethical use of ‘as needed’ medication

There is some unethical use of PRN by mental health professionals. PRN medication was administered for reasons other than it was prescribed.

Sometimes PRN medication was administered punitively. This category was comprised of four findings that were derived from two studies.^{15, 68} Illustrations that describe unethical behavior are documented below.

Finding: Improvements for practice were identified.

Illustrations: “People are written up for 5 to 10 mg of diazepam, which is nothing here – it doesn’t even touch most people” (Nurse 1 – rehabilitation unit) (p. 987).⁶⁸

“I know we had a patient here who was unwell and he had a bad outcome in a mental health report, and I think he was allowed 40 mg of diazepam, but he also had 10 mg in his 8 o’clock (am) dose. So we rigged it, as they say, to say that he got all...but within the 2-hour period he got to have all of that because he was getting elevated because he can be quite aggressive and scary when he goes off. So we allowed him to have it all, so it was quick acting, and we knew he would be going to bed that night” (Nurse 2 – secure unit) (p. 987).⁶⁸

Finding: Mental health professionals used PRN medication for reasons other than the prescribed indication for use.

Illustrations: “If somebody comes to you, and they’re not actually agitated, but they’re saying I’m hearing voices and feel a bit disturbed, then that’s a different reason from what they’re prescribed, but it’s a valid reason to be giving it to them” (Staff Nurse E) (p.165).¹⁵

“Perhaps on occasions, not often, medication is used to deal with somebody’s behavior rather than to treat somebody’s mental state” (Charge Nurse A) (p.165).¹⁵

Finding: Perceived abuse or unethical use of ‘as needed’ medications concerned some participants.

Illustration: “It can be used for the wrong reasons...it can be used as an easy option as opposed to actually investing the time and sitting down and talking to

patients. An easy option is a tablet...an easier option is an injection because it will settle them a lot quicker, so there is scope for abuse” (Nurse 1 – secure unit) (p. 986).⁶⁸

Finding: There appeared to be an aspect of PRN psychotropic administration that had a punitive element.

Illustration: “There have been times where there’s been an assault on the ward. I bet if we look back on times when we’ve given IM medications, say when there’s been a fight between a patient and another patient, or there’s been a fight between a patient and a member of staff. I reckon that medication is given more often when a member of staff’s been assaulted than another patient. There’s a fine line between managing the behaviors and knocking someone out with PRN I think that can happen. That it can be used punitively” (Staff Nurse G) (p. 166).⁶⁸

3.6 Grading the synthesized findings

The GRADE approach⁶⁹ is commonly used by organizations when rating findings from quantitative research, however, there has not been any widely accepted method to date where findings from qualitative research can be graded. One method that has been adopted by the JBI is the ConQual approach. This approach was developed to assist policy makers and health care professionals in establishing confidence in the synthesized findings of qualitative research.⁶⁶ The findings that emerged from this systematic review were graded according to the JBI ConQual approach.⁶⁶ The ConQual approach has been used to establish confidence in the evidence and recommendations

from a qualitative systematic review.⁶⁶ The ConQual approach has qualitative research starting at a ranking of 'high.' The dependability and credibility for each synthesized finding are then graded. Depending on the grades for dependability and credibility, the overall grades for each synthesized finding can remain high or change from high to moderate, low or very low.⁶⁶

Five synthesized findings were generated from the review. Each synthesized finding consisted of a number of findings from the papers that were included in the review. The dependability ranking was determined by calculating an aggregate score of the findings for each synthesized finding. Three of the synthesized findings were ranked as three out of five. The remaining two synthesized findings were ranked as two out of five. This downgraded the original ranking of 'high' to 'moderate.' The credibility for each of the synthesized findings were downgraded one as there were a mix of unequivocal and equivocal findings bringing the final ranking to 'low' (Table 7).

Table 7: Summary of findings

Systematic review title: The experiences of mental health professionals' and patients' use of *Pro Re Nata* (PRN) medication in acute adult mental health care settings

Participants: Mental health professionals who are working in, and patients who are admitted to, acute adult mental health care settings.

Phenomena of Interest: Mental health professionals' and patients' experiences in the use of PRN medication.

Context: This review is about the use of *pro re nata* medication by mental health professionals and patients in acute adult mental health care settings.

Synthesized finding	Type of research	Dependability	Credibility	ConQual score	Comments
<p><u>Benefits and understanding of PRN medication.</u></p> <p>Service users' were able to identify the benefits of PRN medication, and they had a good understanding of the reasons for its use.</p>	<p>Qualitative</p> <p>HIGH</p>	<p>Downgrade one level</p> <p>MODERATE</p>	<p>Downgrade one level</p> <p>LOW</p>	<p>LOW</p>	<p>Dependability: downgraded 1 level. The calculated average of the dependability scores for this synthesized finding was 3 out of 5</p> <p>Credibility: downgraded 1 level due to a mixture of unequivocal and equivocal findings</p>
<p><u>Lack of education about PRN medication.</u></p> <p>Patients described a lack of education about PRN medication and that there were alternatives to its use.</p>	<p>Qualitative</p> <p>HIGH</p>	<p>Downgrade one level</p> <p>MODERATE</p>	<p>Downgrade one level</p> <p>LOW</p>	<p>LOW</p>	<p>Dependability: downgraded 1 level. The calculated average of the dependability scores for this synthesized finding was 3 out of 5</p> <p>Credibility: downgraded 1 level due to a mixture of unequivocal and equivocal findings</p>

<p><u>Power and control.</u></p> <p>Patients perceived that staff had the power and control in regard to PRN medication administration. There was a subgroup of nurses' who displayed custodial care.</p>	<p>Qualitative</p> <p>HIGH</p>	<p>Downgrade one level</p> <p>MODERATE</p>	<p>Downgrade one level</p> <p>LOW</p>	<p>LOW</p>	<p>Dependability: downgraded 1 level. The calculated average of the dependability scores for this synthesized finding was 2 out of 5</p> <p>Credibility: downgraded 1 level due to a mixture of unequivocal and equivocal findings</p>
<p><u>Prescribing and administering PRN medication.</u></p> <p>Prescribing and administration of PRN medication varied according to circumstances, individuals and organizations.</p>	<p>Qualitative</p> <p>HIGH</p>	<p>Downgrade one level</p> <p>MODERATE</p>	<p>Downgrade one level</p> <p>LOW</p>	<p>LOW</p>	<p>Dependability: downgraded 1 level. The calculated average of the dependability scores for this synthesized finding was 2 out of 5</p> <p>Credibility: downgraded 1 level due to a mixture of unequivocal and equivocal findings</p>
<p><u>Unethical use of PRN medication by mental health professionals.</u></p> <p>There is some Unethical use of PRN medication by mental health professionals and some of this is related to environmental factors.</p>	<p>Qualitative</p> <p>HIGH</p>	<p>Downgrade one level</p> <p>MODERATE</p>	<p>Downgrade one level</p> <p>LOW</p>	<p>LOW</p>	<p>Dependability: downgraded 1 level. The calculated average of the dependability scores for this synthesized finding was 3 out of 5</p> <p>Credibility: downgraded 1 level due to a mixture of unequivocal and equivocal findings</p>

3.7 Conclusion

This chapter has described the results of the search and study selection strategy. A description of the studies has been provided with a detailed analysis of the results. The methodological quality has been described, and a table of the final critical appraisal has illustrated the quality of the included papers. The chapter provided explanations of how the findings and categories were developed. Tables which demonstrate each synthesized finding are included. Details of the findings and associated illustrations are included.

There were five meta-syntheses that emerged from the systematic review. The synthesized findings are set out with a description of each synthesized finding. In summary, the first meta-synthesis, 'benefits and understanding of PRN medication' was from the patients' perspective. It is about understanding what the patients believed or understood about PRN medication. The second meta-synthesis, 'lack of education about PRN medication' was from the patient's perspective. This synthesized finding focused on patients views that they were not provided with adequate education about PRN medication. The third meta-synthesis, 'power and control' established that patients' perceive mental health professionals to have the power and the control when it came to PRN medication administration. The fourth meta-synthesis, 'prescribing and administering PRN medication' was predominantly from the mental health professionals experiences of prescribing and administering PRN medication. The fifth meta-synthesis, 'multiple factors influence the use of PRN medication by mental health professionals' highlighted some unethical use of PRN medication by mental health professionals.

This chapter has summarized the results of the systematic review. The ConQual summary of findings table has presented the dependability and credibility of those findings. The final chapter will discuss these findings and place them within the broader context.

Chapter 4: Discussion and conclusions

4:1 Introduction

This chapter provides a synopsis of the topic. An overview of the research conducted is presented. The concept of partnership, where service providers and service users work together is presented. The chapter examines the findings of the systematic review in a broader context. The chapter concludes with discussions of implications for practice, implications for research and the limitations of this research.

4:2 Overview of the topic

For many people admitted into a mental health unit the use of “as required medication” is common practice.³² Often patients admitted to these types of settings are receiving antipsychotic drugs as part of their treatment. However, the therapeutic effect of these kinds of medications can often take several weeks.²⁹ To manage and treat some of the symptoms the patient may be immediately experiencing (such as experiencing agitation, distress or aggression) PRN medication is often administered.²⁹

This research, which explored the use of PRN medication by mental health professionals and patients in acute adult mental health care settings has enabled a greater understanding of the issues for those participants. Mental health reform in Australia is focused, amongst other areas, on addressing issues where patients and mental health professionals can work in partnership.

The use of PRN medication is a common intervention in these acute settings, and some of the issues that have arisen from this research will need further consideration. Patients felt that PRN medication was useful to them. It helped relieve their symptoms, and they described a sense of control over their symptoms by having PRN available to use. The quantitative research on PRN medication use in these settings has emphasized the need for a deeper understanding of the issues and further qualitative research is needed.⁸⁻¹³ Some of the findings from the systematic review included; using PRN medication before trying alternative interventions; documentation of PRN medication is an area that is lacking; education for patients and mental health professionals around PRN medication use can be improved; there are varying practices around PRN medication use, and there are some ethical issues that need to be addressed.

4.3 Mental health reform in Australia

This research has highlighted some matters that require further examination regarding PRN medication use in acute adult mental health care settings. Mental health professionals are already working closely with the patients who are under their care, but some of the issues highlighted by this research show that there are areas of improvement regarding PRN medication use in these acute settings. Working towards a partnership with patients is a goal that mental health professionals can strive towards. Endeavoring to understand the patients' perspective and working closely with patients while upholding their rights is vital to the goals that the Australian government is striving for.

The Council of Australian Governments (COAG) in its publication 'Roadmap for National Mental Health Reform⁷⁰ 2012-2022' identified six priorities for mental health reform. Priority one was to promote person-centered approaches. It describes a mental health system where clinical providers, as well as non-clinical providers, are the building blocks of a mental health system that are person-centered by being respectful and professional and providing collaborative approaches. The publication states that people who are experiencing mental health issues should feel safe and be able to trust the expertise of their service providers.⁷⁰ Although it is not always possible, they should be able to make their decisions and voice their preferences without fear of being stigmatized or marginalized.⁷⁰

A person-centered approach is a service that tries to embrace a philosophy of respect and partnership with people receiving those services. They involve a combined effort from patients as well as patients' friends, families, and mental health professionals.⁷⁰

COAG is dedicated to mental health reform as a national priority. COAG are determined to work toward making a real improvement in the lives of those people who have a mental illness, their carers, families, and communities.⁷⁰

COAG noted a recent publication of the "National Mental Health Commission's first annual National Report Card on Mental Health and Suicide Prevention" which was developed alongside the Roadmap and acknowledged strong calls for mental health to continue to be a key priority on the COAG agenda. COAG recognized that these ideals could only be achieved through co-operation throughout the sector, and in particular with carers and consumers. Importantly,

that policy needs to be guided by and be responsive to peoples' lived experience. COAG state that we can build and learn from qualitative and quantitative evidence to ensure we make the best of investment and deliver the right models of care.⁷⁰

The journey of mental health reform in Australia is an ongoing and evolving one⁷⁰ and the findings from this study have shown that there are some areas of improvement that need to be addressed in regards to the use of PRN medication in acute mental health care settings. Addressing the issues, as outlined by COAG, can provide better outcomes for patients around their use of PRN medication in acute mental health care settings as well as providing guidelines for mental health professionals and their use of PRN medication.

4.4 Quantitative research on PRN medication

Evidence from quantitative research conducted into the use of PRN medication in acute adult mental care settings is gained primarily from data derived from examining patients' medical records for information. The data obtained is useful in allowing a greater understanding of many issues but also highlights that there is an imbalance in knowledge about this topic from the perspective of the patients. Retrospective studies have sought to look at the factors surrounding PRN medication use in acute mental health care settings.^{10, 11} Quantitative research which examined the use of PRN medication for patients with psychotic disorders audited patient's charts retrospectively to look at medication administration, prescription, and outcomes.¹⁰ During a three month period, PRN medication was administered during 82% of admissions.¹⁰ Polypharmacy and not specifying indications for use were common occurrences; outcomes of

the PRN medication that had been administered was lacking, and that medication-related morbidity is strongly associated with PRN medication.¹⁰

Researchers attempting to understand the prevalence and frequency of PRN medication, what medications were given and the documented reason for administration, found that a lack of documentation in the medical records surrounding the use of PRN medication limited the information that they was available, which the authors noted was a major concern.¹¹ Studies which attempted to look at detailed circumstances surrounding the use of PRN medication found that nearly all patients were prescribed PRN medication and that PRN medication use has endured as standard practice.⁸ Documentation was described as poor regarding documentation of PRN administrations and prescriptions.⁸

Some of the issues that have been highlighted by the quantitative research on PRN medication use include poor documentation practices, lack of use of alternatives to using PRN medication and PRN medication use related morbidity. Some of these issues have raised the need to gain an understanding of the experiences of those involved with the use of PRN medication in these settings.

4.5 Patients understanding of PRN medication

The evidence that generated from the systematic review findings demonstrated that patients have an understanding of PRN medication and found the use of these types of medications helpful to them. For many patients, the use of PRN medication helped them to feel more in control of the symptoms of their mental illness such as anxiety, agitation or insomnia. The use of PRN medication also

allowed the patients to feel involved in their treatment. Often patients receive information about PRN medication around the circumstances in which it may be available to them and the reasons for its use. Engaging patients in their care and treatment is considered an important step in helping them to understand these aspects of their care.⁷⁰ The findings of the review revealed that many patients were able to define PRN medication and the reasons and circumstances for its use. Patients described that having PRN medication available for use provided them with some flexibility, as well as the calming effect that PRN medication could provide.⁶⁴ Patients indicated that although PRN medication could be beneficial, they were aware that extended use could impede other ways of managing their symptoms or even lead to dependency.⁶⁴

4.6 Documentation of PRN administration

Documentation has been highlighted as an issue in regards to PRN medication use.^{10, 14} Descriptive research which was conducted by utilizing retrospective chart audits explored the mental health nurses' PRN psychotropic medication administration practices.¹⁴ The researchers found that documentation of who (mental health nurse or patient) initiated the administration of PRN medications was poor. Documentation of the outcome or effects of the PRN medication administration was also poor – less than half. Approximately one third of administrations had no documented reason for administration.¹⁴

Hilton (2008) found that practices around *pro re nata* administration are mostly unregulated and guided by unreliable evidence leaving mental health professionals and the mental health service open to claims of misuse and poor

accountability (both unintentional and intentional) of psychotropic medications.³ Research has indicated that many mental health professionals did not record why PRN medication was administered or the effects of the PRN medication administered which left questions about why it had been given, what was the outcome, and whether the prescribing requirements had been met.^{3, 13}

4.7 Alternative interventions to PRN medication administration

The research on PRN medication use in mental health settings has emphasized the use of alternative interventions to the use of PRN medications. Alternative non-pharmacological treatment options to PRN medication have been shown to be effective and associated with fewer side-effects.⁷¹ Bakers (2007) research into mental health professionals' PRN medication practices found that there were many alternatives to PRN medication use including patients spending more time with nursing staff, anxiety management, and de-escalation strategies.¹⁵ Bakers (2006) research into service users experience with PRN medication found that participants could identify alternatives to PRN medication including talking with staff and doing recreational activities.⁶⁴

Curtis' (2007) research which looked at the use of PRN psychotropic medications and their association with other therapeutic interventions conducted a retrospective chart audit.⁹ The setting was an acute mental health care facility in NSW Australia. The study reported that 73% of patients in the audit received PRN medication at least once. Some of the results of the audit included that 28% of times when PRN medication was administered there was no additional intervention, either pre or post, documented.⁹ A total of 23 patients

received documented face to face counselling at least once around the time of administration. Limited evidence was found into the use of alternative therapeutic interventions either prior to, or after, the administration of PRN medication. There was no documentation if PRN was used as a last resort. The authors found that although documentation was poor they believed that nurses were using alternative interventions, however.⁹

Geffen (2002) examined the belief and knowledge of doctors and nurses in acute mental health units about their use of PRN medication for psychosis.¹⁰ Geffen found that nurses identified more non-pharmacological alternatives for agitation than did doctors. Both doctors and nurses cited substantially more alternatives for agitation as opposed to alternatives for psychotic symptoms.¹⁰ The most usually reported alternatives to PRN medication were counselling or talking with the patient; distraction techniques; having time out; reality testing; cognitive behavior therapy and relaxation. Guidelines from a New South Wales Government publication on Psychiatric Management recommends that the choice to administer should only happen when alternative's to PRN medication have been considered.³² Cleary (2012) reported that patients had many suggestions for alternatives to PRN medication including the most frequent, going for a walk, talking to staff and taking time out.⁶⁵

Further exploration of whether alternatives to PRN being administered is currently practiced, and if so, how often and under what circumstances, is important to understand and an area of research that is lacking.

4.8 Education

The review emphasized a perception that there was a lack of education provided to patients regarding PRN medication. Although findings from the review demonstrated that patients perceived themselves as having an understanding of PRN medication, it was the patient's perception that not enough education is provided to them in regards to the management and understanding of PRN medication. The experiences surrounding the education received varied greatly among patients. The findings showed that education was provided by a range of different health professionals including nurses, general practitioners, psychiatrists and pharmacists and that the extent and quality of the education provided also varied. The pharmacists were often described as the person being the most helpful in providing education about medications and the possible side-effects.⁷²

Providing patients with education on their medication has been shown to increase knowledge and compliance of medication compared to patients who have not received any education.³⁰ The results of a systematic review demonstrated that a planned educational session, using both verbal and written methods, followed up by discussion to be most effective.³⁰ Also, regular educational sessions were shown to increase the patient's knowledge of their medications they were taking as well as improving insight into their illness.³⁰

Patients expressed a desire for more information regarding their medication including wanting to know what the medication was for and why it was being administered. The findings indicated that patients felt that not receiving all the relevant facts regarding PRN medication could impact on them in numerous

ways. Patients voiced alternative ideas to the use of PRN medication and expressed concern that these may not have been considered. The extant literature supports this view with little evidence produced to show that alternative therapies to PRN medication have been tried either before or after administration of the medication.⁹

Patons (2003) research emphasized the importance of training for nursing staff, who act as *de facto* prescribers.⁶⁰ Education for mental health professionals on the use of PRN medication is an area that may improve practice around its use. Curtis' retrospective study on alternatives to PRN medication use cited an example of a common textbook that is used in Australia, Elder⁷³ (2005) "Psychiatric and Mental Health Nursing," where there is less than a page devoted to PRN administration.⁷⁴

4.9 Power and Control

Findings from the systematic review indicated that power and control were perceived issues related to PRN medication use. The evidence from the systematic review revealed that patients had a belief or perception that mental health professionals had the power and the control when it came to PRN medication administration; with patients often describing negative emotions in regards to this. There has been a great deal of research conducted that examines the relationship between the mental health patient and the mental health professional.⁷⁴⁻⁷⁶ A recently published qualitative study examined the values important to patients under involuntary treatment orders and found that patients felt the sense of loss of control was experienced due to the

authoritarian attitude of the staff.⁷⁴ The findings of the systematic review concur with this with patients describing a sub-group of staff who displayed 'old school' type custodial care as contributors to the imbalance of power and control. However, it is not just the patient that feels the imbalance of power within the relationship. Mental health professionals are often acutely aware of the power and control they have over the patient.⁷⁶ Mental health professionals, and specifically nursing staff, are often the ones to enforce a Mental Health Act, and this can be a contributing factor to the patient's perception that the staff have all the power and control.⁷⁶ The challenge for nursing staff is to ensure that adequate care and treatment is provided to the patient, often to patients who do not believe they need treatment.⁷⁶

Although examples of imbalance of power was identified from the research, Breeze (1998) reported that patients were able to identify nursing staff that were helpful. This was described as treating the person with respect, as a person.⁷⁵ The patients felt that nursing interventions that were 'skillful' and 'less controlling' had a positive effect on their behavior. Overall, the analysis of the data found that nursing interventions could have either a negative or positive effect on the care experiences of the patients.⁷⁵

4.10 Prescribing and administration practices

The evidence generated from the systematic review has shown that there are many variables affecting PRN medication administration and prescribing practices and these variations in the practice were across organizations, health care facilities and individuals. The review highlighted that PRN medication can

be prescribed based on a patient history, mental state and risk assessment but that they may also be prescribed to provide nursing staff with reassurance.

Studies have shown that the prescribing practices of PRN medication vary widely and are influenced by diverse factors.¹⁶ PRN medication is often administered early in the patient's admission, when the service potentially knows the least about the patients.¹⁶ A lack of uniformity in the prescription of PRN medication has been noted to potentially contribute to misunderstandings or medication errors.¹⁶ There is a lack of clear, evidence-based guidance that specifically focuses on the process of PRN medication and this may well be contributing to the vast variations in practice. One such study attempted to reduce this gap by producing some consensus-based guidance for PRN psychotropic medication in the mental health setting utilizing the Delphi technique.²⁶ The results were presented into four separate themes; (1) services users should be more involved in all of the processes associated with PRN psychotropic medication, (2) process of prescribing and administering PRN medication, (3) process of review and (4) side effects associated with PRN medication. In regards to the process of prescribing and administering consensus based opinion concurred that this process should be clearly based on assessment, leading to a clear and proactive indication for use of the prescription; the indications for use should be clear and agreed to by those involved, and prescription should be time-limited, which in turn encourages ongoing review of orders.²⁶ Regular review of prescribed PRN medication is advocated particularly if the medication is being administered frequently.²⁶

As most PRN medication in acute mental health care facilities is initiated by mental health nursing staff and by patients who are requesting PRN medication

it is important that the Medical Officer who is prescribing does so in an ethically and appropriate manner.³² Nurses should adhere to the specifications that have been written on the medication order. If this is unclear, the order should be clarified by the treating medical officer.³² McKenzie's (1999) research highlighted the importance of regular reviews of PRN medication orders, citing an example of medications to assist with sleep being ordered as PRN medication but not being prescribed for a patient on discharge as contributing to ongoing problems with sleeping after discharge from hospital.¹³

The findings from the systematic review have highlighted that there are some unethical prescribing and administration practices associated with PRN medication in acute adult mental health care settings. Some areas of improvement have been highlighted including the need for mental health professionals to adhere to protocols and guidelines that are already in place. Further education and the need to develop additional guidelines around the use of PRN medication may also be an important step in gaining better and safer use of PRN medication in mental health care settings.

4.11 Factors influencing the use of PRN medication by mental health professionals

The data that was generated from the systematic review found evidence on varying factors that influence the use of PRN medication. Environmental factors and punitive or unethical influences were considered to affect decision-making and use of PRN medication. The unethical use of PRN medication was

described when mental health professionals used PRN medication when preferable alternatives existed or for reasons other than was prescribed.

While taking into consideration the factors that may influence unethical practice, the National Mental Health Standards 2013 for the mental health workforce in Australia states that, “the mental health practitioner demonstrates legal, ethical and accountable mental health practice and ethical decision-making that remains open to the scrutiny of people with lived experience, peers and colleagues”.⁵⁴

Ethical has been described as about dealing with morals or the principles of morality. Moral has been described as being concerned with the principles or rules of right conduct or the distinction between wrong and right.⁵¹ The field of ethics or moral philosophy comprises systematizing, guarding, and endorsing ideas of right and wrong behavior. Philosophy theorists today usually divide the ethical theories into general subject areas: meta-ethics, applied ethics, and normative ethics. Of these, normative ethics takes on the most applied task, which is to decide on moral standards that control right and wrong behavior. This could involve expressing the good habits that we should strive to acquire, the duties that we ought to follow, or the significance of our behavior on others.⁵¹

Resource limitations, particularly staffing levels and skill mix were implicated as a reason for higher levels of PRN medication administration instead of other more therapeutic alternatives. Staffing levels and skill levels have been well documented and researched as areas affecting the delivery of care. In Sweden, healthcare professionals, including nurses, doctors and pharmacists reported

that much of the ethical dilemmas faced by staff were directly related to lack of resources, lack of time and a heavy administrative component. The dilemmas often arose when there were conflicting goals, those of the organization versus the interest of the patient.⁷⁷ Achieving a balance between these goals is noted as the basis of many ethical tensions in mental health nursing.⁷⁶

Some of the unethical behavior that was highlighted in the systematic review were that staffing issues and environmental factors were conceivable reasons for poor decision making when mental health professionals are considering administering PRN medication. Although judging others' behavior is complex, some unethical behaviors such as this can be understood from the perspective of those staff who are involved in such behavior. Acting in a punitive manner towards patients, however, regarding the administration of PRN medication, is not acceptable.

Research which looked at the views of involuntary patients regarding their treatment generally, but not particularly about PRN medication he found that 22% of those participants felt that they had been abused by staff.⁷⁴

Using PRN medication in acute mental health care settings to control patients challenging behavior such as harmless acting out or by being demanding on staff is ethically questionable.³² PRN medication orders need to be regularly reviewed particularly if PRN medication is being given frequently.³²

Despite the difficulties that mental health professionals' are faced with in dealing with difficult and challenging situations at times, it is important to have the interest of the patient at the center of any decision making when it comes to the

administration of PRN medication.

People experiencing mental health issues need support. They should feel safe in trusting the knowledge of service providers and have confidence that service providers will be professional and respectful. They should know that they will be able to make their own decisions and set their own preferences without fear of stigma or marginalization.²⁹

4.12 Safety around PRN medication use

Prescribing antipsychotic drugs on an “as needed” basis is not supported by vigorous evidence of the effectiveness and safety of its use.²⁹ PRN medication use in acute inpatient mental health care settings can be linked with an increasing risk of morbidity.³ Inappropriate use of PRN medication can potentially contribute to patients being given excessive dosages or polypharmacy and could complicate the assessment of the efficacy of patients regularly prescribed medications.³

A multi-center audit was undertaken in 49 UK mental health services which involved a 1 day census of all antipsychotic and anticholinergic drugs prescribed for 4191 patients. A large majority of patients were prescribed antipsychotic medication. The authors noted that the nursing staff have significant discretion to administer large doses of antipsychotic medication on an “as needed” basis.⁷⁸

The importance of considering alternatives to PRN medication has already been highlighted in this review. Research which supports this reported that reliance on PRN psychotropic medications can contribute to drowsiness that may

contribute to a patient's ability to acquire new skills and knowledge and that addiction to some PRN medications, particularly benzodiazepines are a genuine concern.⁷¹

PRN medications can be useful but they are not without side-effects.^{60, 78} Due to the potential for side-effects, these medications need to be used with careful consideration. The benefit for the patient needs to be weighed up against any potential unwanted side-effects.⁷⁹ Davies (2007) found that there are no formal studies on the pharmacokinetic implications into PRN medication prescribing practices.⁸⁰ Davies' research sought to look at potential drug interactions of drugs administered to inpatients on psychiatric wards. The research indicated that prescribers should be aware of the increased unpredictability in drug interactions and side-effects with the use of PRN medication.⁸⁰

Mental health professionals need to be aware of all of the issues that are important when administering these medications. PRN can be useful in dealing with the distress of acute mental health symptoms but despite this should be used with caution.²⁹ It has been suggested that staff need to develop knowledge and awareness around potential side-effects before using psychiatric PRN medication.³¹

Antipsychotic medications are potent agents that may place patients at increased risk of side-effects that may be significant.⁵ Concerns have been raised as to whether some administration of PRN medication is used as "chemical restraint" or for the convenience of staff.⁵ Patients who receive PRN antipsychotics have a greater likelihood of developing side-effects, particularly sedation, confusion, extrapyramidal side-effects and postural hypotension.¹⁰

The usual PRN medication administration and prescribing system allows nurses to respond quickly to clinical need, however, prescribers should be made aware that PRN prescribing may introduce increased unpredictability in drug interactions and thereby placing patients at greater risk.⁸⁰

Research which looked into pre and post accreditation of the clinical practice of giving PRN medication for psychiatric inpatients to see if there were any improvements post accreditation found that by implementing clinical practice guidelines significantly reduced the frequency of PRN medication administration and also enhances patient safety.⁸¹

Mental health professionals need to be aware of the issues surrounding patient safety in regards to the use of PRN medication. PRN medication should always be used cautiously and while it can be a useful intervention in many circumstances, knowledge around potential side-effects and drug interactions is vital.

4.13 Implications for practice

The recommendations that have been derived from this review are aimed at improving practices around the use of PRN medication in acute adult mental health care settings. The recommendations have been given Grade B according to grades of recommendation that were developed by the JBI.⁸² Grade B is considered a 'weak' recommendation. The evidence can still be useful, however, to guide management of a particular health management plan if the effects of that plan appear to have some desirable effects that outweigh any undesirable effects; where it can be shown that there is evidence that supports

its use even though this may not be high-quality evidence; that there are benefits that can be achieved with little or no impact on resource use and that patient experience, their values and their preferences, may or may not have been taken into account.⁸² The following recommendations for practice are stated.

- Mental health professionals should provide education and assistance to patients regarding alternative interventions to PRN medication. (Grade B)

The findings from the review indicated that patients do not receive adequate education about PRN medication. Mental health professionals should endeavor to educate patients about PRN medication, specifically about the desired effects and benefits, as well as any possible side-effects or unwanted effects (such as dependence) of the medication. Education that is structured, both written and verbal, should be provided. Patients and mental health professionals recognized that using alternative interventions to PRN medication was desirable in some circumstances.

The findings revealed that there was a lack of use of these alternative interventions. Alternatives to using PRN medication should be explored initially when a patient requests PRN medication or when a mental health professional is considering administering PRN medication.

- Mental health professionals should strive towards a collaborative approach that includes working with the patients in regard to the best outcomes for the patient and their use of PRN medication. (Grade B)

The findings from the review indicate that patients have a perception or belief that mental health professionals have the power and control over them when it comes to PRN medication use. Mental health professionals should strive to

work in partnership with patients when using or considering using PRN medication.

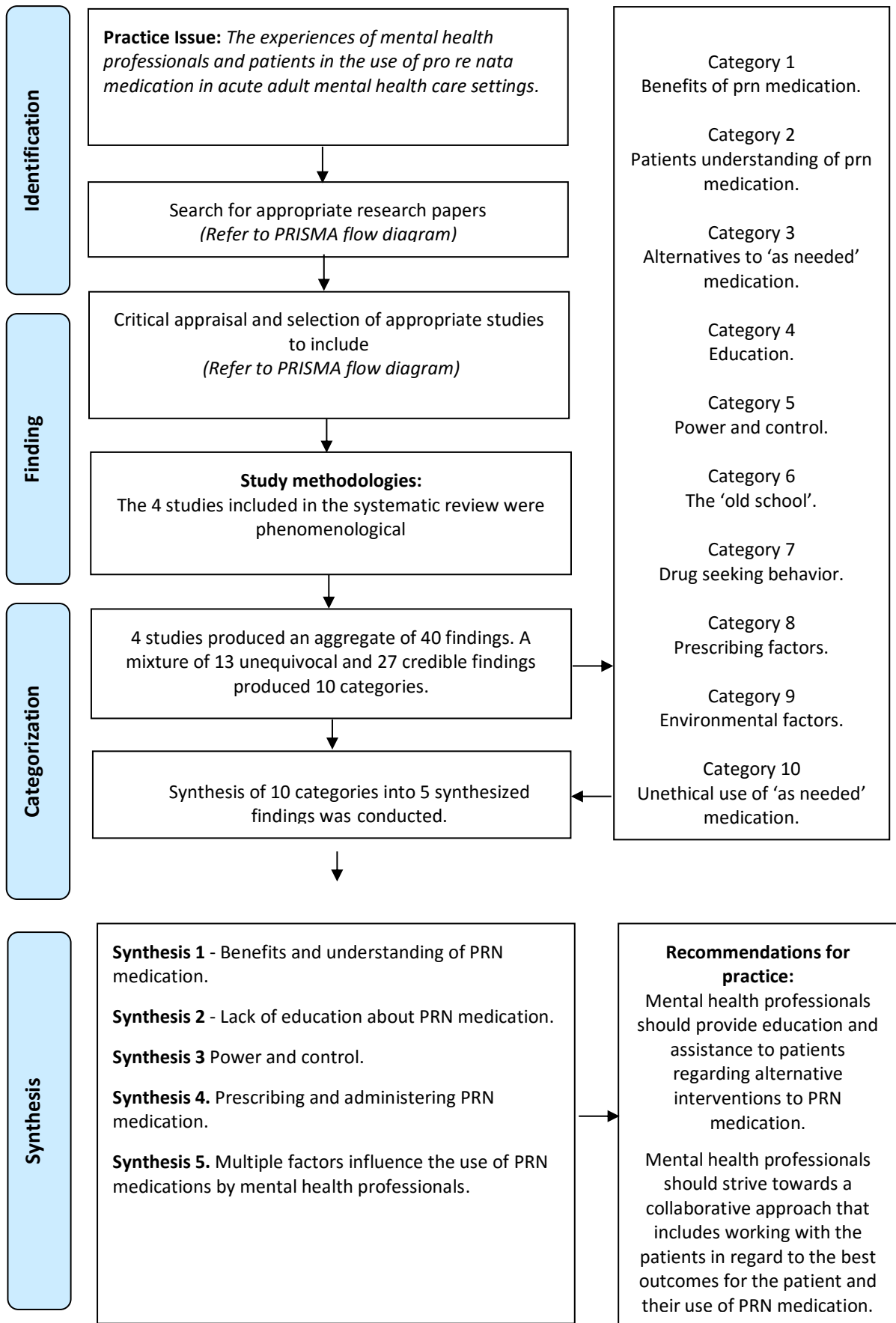
- Mental health professionals should receive education around appropriate administration and prescribing practices for PRN medication. (Grade B)

The findings from the review highlighted variables in the prescribing and administering practices of mental health professionals. There were variations in the practice of individual staff and across wards and organizations. These variations highlight that improvement and guidance are needed. Guidelines and protocols around PRN medication use should be observed.

4.14 The meta-aggregation process

Meta-aggregation is a process of systematic review that mirrors the methods of a quantitative review but is about upholding the requirements of qualitative research.² An overview of the process of meta-aggregation is outlined below.

Table 8: The Meta-aggregation process



4.15 Implications for research

There are numerous areas of quantitative research into the use of PRN medication but a paucity of qualitative research into the experiences of mental health professionals' and patients' use of PRN medication. The review highlighted some of the issues that patients and mental health professionals are experiencing when using PRN medication. Further primary qualitative research which looks at reasons contributing to current practices around PRN medication is needed to expand on the findings from the systematic review. One such area is the reported lack of using alternatives to PRN medication administration.

Further research can look more deeply into the issues that have been highlighted from this systematic review and address the issues by developing guidelines and protocols around PRN medication use. This in turn can lead to improved and safer practice and provide better outcomes for the mental health professionals and patients and their use of PRN medication in acute adult mental health care settings.

4.16 Limitations

There were some potential limitations of the review. A systematic search of the literature was carried out, and every effort was made to identify all relevant studies. However, it is possible that some studies may have been missed. Studies recently published since the search was conducted are not included in this review. It will be necessary to conduct the search again in the future in order to include newly published work on this topic.

The search strategy also had an English language limitation resulting in studies that may be published in other languages not being included in the review. This could potentially have an impact on the research findings.

This review did not consider the experiences of carers or significant others and the impact the administration of PRN medication may have on their experience.

The review sought to explore the experiences of mental health professionals and patients use of PRN medication. The experiences from these two groups were not analyzed separately. Where possible the voices were identified. It is believed that the decision to combine the voices in the analysis did not impact on the overall findings of the review however this should be taken into consideration when considering the findings.

4.17 Conclusion

This review sought to understand the experiences of mental health professionals' and patients' use of PRN medication in acute adult mental health care settings. The evidence generated from the systematic review has shown that the use of PRN medication, which is widely used in acute mental health care settings, lacks uniformity in the way it is prescribed, administered and used by patients and mental health professionals. There are many variations in its use. A range of experiences by all participants has been highlighted, both positive and negative.

Patients found that PRN was useful to them and that having PRN medication available to use when they needed it, helped them to take some control of their symptoms. Patients expressed their views that alternatives to PRN medication

could be helpful. Alternatives to using PRN medication such as counselling, distraction strategies, exercise or using relaxation techniques appeared to be underutilized. Education around alternatives to using PRN medication as well as education about the PRN medications that were administered, were areas of PRN medication use that could be improved. Education about medication that was provided to patients was found to improve the patient's compliance, insight and knowledge.

Patients expressed their beliefs that the staff had the power and control when it came to PRN medication. Some of those experiences were about not getting PRN medication when it was requested and other experiences of having PRN medication administered against their will.

Prescribing and administration of PRN medication practices appeared to vary considerably. These practices varied between individuals, health care facilities and organizations. The research highlighted that prescribing and administration of PRN medications should be based on patient assessment and that it should be given for the reasons that it was prescribed. This research has revealed that there are some unethical practices around administration and prescribing practices related to PRN medication in acute mental health care settings.

Some of practices considered unethical were using PRN medication when more therapeutic alternatives were available. Patients believed that PRN medication was sometimes administered punitively. Environmental factors such as staffing issues and skill mix were considered to be linked to higher levels of administration of PRN medication due to higher stress levels and in turn, poor decision making.

This research has facilitated a greater understanding of why practice around PRN medication use varies so widely. Understanding these issues enables acute adult mental health care facilities to review their practice around PRN medication use. Recommendations that can improve practice have been highlighted in this review. There is limited qualitative evidence available to understand all of the issues related to PRN medication use in these settings, but this review has revealed that there are areas of improvement that are implicated, and that these improvements can be achieved.

Appendix I: Detailed Search Strategy

Embase database search (28/8/2014)

Two search grids were used for this database search – one using ‘mental health professionals’ and one using ‘patients.’

Embase logic grid 1 – mental health professional AND pro re nata medication

AND qualitative research AND mental health terms

1) Mental health professional	2) Pro Re Nata medication	3) Qualitative research	4) Mental health terms
“Psychiatric nursing”/syn OR “psychiatric nursing”:ti,ab OR Nursing/syn OR nurse/syn OR nurse*:ti,ab OR “mental health care personnel”/syn OR “mental health care personnel”:ti,ab OR “mental health professional*”:ti,ab OR psychiatrist*/de OR psychiatrist*:ti,ab	“Pro re nata”:ti,ab OR prn:ti,ab OR “as needed”:ti,ab OR “as required”:ti,ab	“qualitative research”/syn OR “qualitative research”/de OR “qualitative research”:ti,ab OR qualitative:ti,ab OR ethnography:de OR ethnography:ti,ab OR “ethnographic research”/de OR “personal experience”/syn OR “personal experience”:ti,ab OR interview/de OR interview:ti,ab	Schizophrenia/de OR schizophrenia/syn OR schizophrenia:ti,ab OR “bipolar disorder”:ti,ab OR psychiatric:ti,ab OR mental:ti,ab OR psycho*/de OR psycho*:ti,ab OR mental*

Embase logic grid 2 – patients AND pro re nata medication AND qualitative

research AND mental health terms

1) patient	2) Pro re nata medication	3) Qualitative research	4) Mental health terms

Mental patient/syn OR "mental patient":ti,ab OR patients/syn OR patients:ti,ab	"Pro re nata":ti,ab OR prn:ti,ab OR "as needed":ti,ab OR "as required":ti,ab	"qualitative research"/syn OR "qualitative research"/de OR "qualitative research":ti,ab OR qualitative:ti,ab OR ethnography:de OR ethnography:ti,ab OR "ethnographic research"/de OR "personal experience"/syn OR "personal experience":ti,ab OR interview/de OR interview:ti,ab	Schizophrenia/de OR schizophrenia/syn OR schizophrenia:ti,ab OR "bipolar disorder":ti,ab OR psychiatric:ti,ab OR mental:ti,ab OR psycho*/de OR psycho*:ti,ab OR mental*
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CINAHL database search (28/8/2014)

Two search grids were used for this database search – one using ‘mental health professionals’ and one using ‘patients.’

CINAHL logic grid 1 – mental health professional AND pro re nata medication AND qualitative research AND mental health terms

1)	2)	3)	4)
Mental health professional	Pro re nata medication	Qualitative research	Mental health terms
(MH psychiatric nursing+ OR TI psychiatrist* OR AB psychiatrist* OR MH mental health personnel+ OR TI "mental health professional*" OR AB "mental health professional*")	(TI PRN OR AB PRN OR TI pro re nata OR AB pro re nata TI "as needed medication" OR AB "as needed medication")	(TI Qualitative OR AB qualitative OR TI ethnography OR AB ethnography OR TI interview OR AB interview OR TI experience OR AB experience OR TI phenomenology OR AB phenomenology OR MH	(TX psychiatric OR TX mental* OR TX bipolar OR TX schizophrenia OR TX psych*)

		ethnographic research+ OR MH qualitative studies+)	
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CINAHL logic grid 2 - patients AND pro re nata medication AND qualitative research AND mental health terms

1) Patient	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
(TI patient* OR AB patient* OR MH patients OR TI nurs* OR AB nurs*)	(TI PRN OR AB PRN OR TI pro re nata OR AB pro re nata TI "as needed medication" OR AB "as needed medication")	(TI Qualitative OR AB qualitative OR TI ethnography OR AB ethnography OR TI interview OR AB interview OR TI experience OR AB experience OR TI phenomenology OR AB phenomenology OR MH ethnographic research+ OR MH qualitative studies+)	(TX psychiatric OR TX mental* OR TX bipolar OR TX schizophrenia OR TX psych*)

PubMed database search (28/8/2014)

Two search grids were used for this database search – one using ‘mental health professionals’ and one using ‘patients.’

PubMed logic grid 1 – mental health professional AND pro re nata medication AND qualitative research AND mental health terms

1) Mental health professional	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
psychiatric nursing [mh] OR nurses [mh] OR nurs*[tiab] OR psychiatrist* [tiab]	PRN [tiab] OR pro re nata [tiab] OR as needed medication [tiab]	Qualitative research [mh] OR qualitative [tiab] OR ethnography [tiab] OR	Psychiatric [tiab] OR mental [tiab] OR psychos* [tiab] OR psychot* [tiab]

OR mental health professional*[tiab]		interview [tiab] OR phenomenology [tiab] OR experience [tiab]	OR schizophrenia [tiab]

PubMed Logic grid 2 - patients AND pro re nata medication AND qualitative research AND mental health terms

1) Mental health professionals	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
Patients [mh] OR mental health patient* OR psychiatric patient*	PRN [tiab] OR pro re nata [tiab] OR as needed medication [tiab]	Qualitative research [mh] OR qualitative [tiab] OR ethnography [tiab] OR interview [tiab] OR phenomenology [tiab] OR experience [tiab]	Psychiatric [tiab] OR mental [tiab] OR psychos* [tiab] OR psychot* [tiab] OR schizophrenia [tiab]

Scopus database search (28/8/2014)

Two search grids were used for this database search – one using ‘mental health professionals’ and one using ‘patients.’

Scopus logic grid 1 – mental health professional AND pro re nata medication AND qualitative research AND mental health terms

1) Mental health professional	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
Nurs* OR psychiatrist OR “mental health professional” OR “mental health nurse” OR “psychiatric nurse.”	“pro re nata” OR prn OR “as needed.”	“qualitative research” OR interview OR ethnography OR “qualitative and experience” OR experience OR phenomenology	Schizophrenia OR mental OR psychiatric OR psych*

		OR "qualitative studies."	
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Scopus logic grid 2 – patients AND pro re nata medication AND qualitative research AND mental health terms

1) Patient	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
Patient* OR "mental health patient*" OR "psychiatric patient"	"pro re nata" OR prn OR "as needed."	"qualitative research" OR interview OR ethnography OR "qualitative and experience" OR experience OR phenomenology OR "qualitative studies."	Schizophrenia OR mental OR psychiatric OR psych*

PsycINFO database search (3/11/2014)

Two search grids were used for this database search – one using 'mental health professionals' and one using 'patients.'

PsycINFO logic grid 1 – mental health professional AND pro re nata medication AND qualitative research AND mental health terms

1) Mental health professional	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
psychiatrist.mp. or exp Psychiatrists/ exp Psychiatric Nurses/ or exp Mental Health Personnel/ or "mental health nurse".mp. "mental health professional".mp.	(pro re nata or prn or "as needed medication" or "as required medication").mp.	(qualitative or ethnography or phenomenology or experience).mp. or Exp ethnography/ or Exp phenomenology/	(psychiatric.mp. exp Psychosis/ or psychosis.mp. Mental).mp. or exp Mental Health/

PsycINFO logic grid 2 – patients AND pro re nata medication AND qualitative research AND mental health terms

1) Patients	2) Pro re nata medication	3) Qualitative research	4) Mental health terms
exp Psychiatric Patients/ or exp Patients/ or "mental health patient".mp.	(pro re nata or prn or "as needed medication" or "as required medication").mp.	(qualitative or ethnography or phenomenology or experience).mp. or Exp ethnography/ or Exp phenomenology/	(psychiatric.mp. exp Psychosis/ or psychosis.mp. mental.mp. or exp Mental Health/

Grey Literature Search

A Google Scholar search using the keywords pro re nata medication, AND qualitative research found four citations which had already been identified in the electronic database search.

A search of Mednar using keywords pro re nata AND mental health found four papers which had already been identified through an electronic database search.

No papers were found by searching ProQuest Dissertations and Theses.

Appendix II: Critical Appraisal Instrument

JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research

Reviewer Date

Author Year Record Number

	Yes	No	Unclear	Not Applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info.

Comments (Including reason for exclusion)

Appendix III: Data Extraction Instrument

QARI data extraction tool

JBI QARI Data Extraction Form for Interpretive & Critical Research

Reviewer Date

Author Year

Journal Record Number

Study Description

Methodology

Method

Phenomena of interest

Setting

Geographical

Cultural

Participants

Data analysis

Authors Conclusions

Comments

Complete

Yes

No

Findings	Illustration from Publication (page number)	Evidence		
		Unequivocal	Credible	Unsupported

Extraction of findings complete Yes No

Appendix IV: Excluded Studies

[1] Usher, K., Baker, J., Holmes, C., Understanding clinical decision making for PRN medication in mental health inpatient facilities

Reason for exclusion: did not meet inclusion criteria

Appendix V: Included Studies

Study	Methods	Participants	Intervention	Outcomes	Notes
[12], Baker, J. A., Lovell, K., Easton, K., Harris, N., 2006	Qualitative semi-structured interviews	Service users' in mental health care settings	Service users' experiences of "as needed" psychotropic medications	Service users can "as needed" medications useful. There can be power struggles between Nurses and service users associated with the administration of "as needed" medication and that nurses should take this into account.	This paper provides an insight into service users' experience of the administration of "as needed" medication.
[11], Baker, John Anthony, Lovell, Karina, Harris, Neil, 2007	Qualitative semi-structured interviews	Mental health professionals involved in the prescribing, dispensing or administration of PRN medication	Mental health professionals psychotropic pro re nata (PRN) medication practices	The administration processes surrounding PRN psychiatric medications are complex and differ between professional groups and organizations	This paper provides an insight into PRN medication practices by different professional groups.
[30], Cleary, M., Horsfall, J., Jackson, D., O'Hara-Aarons, M., Hunt, G. E., 2012	Qualitative semi-structured interviews	40 inpatients in an acute mental health care setting	Patients views and experiences of Pro Re Nata medication	Interviewees provided information that Pro Re Nata medication could help relieve anxiety and help induce sleep. Nursing interactions involving Pro Re Nata medications are inadequate	This paper represents the voices of patients in acute mental health care settings and their experience with the use of Pro Re Nata medication.
[29], Usher, Kim, Baker, John A., Holmes, Colin, Stocks, Belinda, 2009	Qualitative semi-structured interviews	19 Doctors and Registered Nurses	Nurses and Doctors decision-making surrounding the administration of pro re nata or "as needed" medications.	There is an urgent need to develop psychotropic "as needed" medication education material for Mental health nurses. Further research is required to develop more complete understanding of the prescription of "as needed" psychotropic medications.	This paper provides an insight into the practices of Nurses and Doctors and their use of pro re nata medication.

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