



**TURUN
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PATIENT PARTICIPATION IN PRO RE NATA MEDICATION IN FORENSIC PSYCHIATRIC INPATIENT CARE

Kirsi Hipp



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To my Family

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ABSTRACT

Patient participation is highlighted in mental health care from the viewpoint of both human rights and quality of care. The purpose of this study is to describe and explain patient participation in all pro re nata (PRN, “as-needed”) medication in forensic psychiatric inpatient care. The knowledge produced can be used to develop people-centered forensic psychiatric care.

The study was conducted in three phases. The first phase involved an integrative review of previous knowledge conducted using electronic and manual searches. The data were analysed with the constant comparison method. The second phase was a document analysis of nursing documents over the one-year period. Statistical methods were used in the data analysis. The third phase consisted of individual interviews with patients and group interviews with registered nurses. The data were analysed with inductive content analysis. The empirical phases were carried out in a forensic psychiatric hospital in Finland in 2018–2020.

Based on the studies included in integrative review (n=16), patient participation refers to the shared decision-making of patients and professionals in PRN administration. To participate, patients had to have the motivation and capability. Previous knowledge on patient participation in planning and evaluating PRN and the viewpoint of forensic psychiatric care was lacking. Based on the document analysis (67 patients), PRN was frequently used for both psychiatric and physical reasons, mostly at the patients’ request and usually administered in agreement. Patients had named several alternative methods for PRN in advance, but they were rarely documented as being used. Documented feedback, especially from the viewpoint of patients, was often missing. Interviewed patients (n=34) and registered nurses (n=19) perceived forensic psychiatric inpatient care to be a special context for patient participation in PRN. Patients had individual preferences on their PRN. Their role in collaboration with professionals in PRN was undetermined. Patients wanted to decide for themselves about PRN use, and nurses limited discussions to avoid conflicts.

More research and systematic approaches are needed to promote patient participation, especially in planning and evaluating their PRN. The expertise of both patients and professionals are important in providing good quality care.

KEYWORDS: Document analysis, forensic psychiatric inpatient care, interview, integrative review, mental health nursing, nursing documentation, patient participation, people-centered care, PRN medication

TURUN YLIOPISTO

Lääketieteellinen tiedekunta

Hoitotiede

KIRSI HIPPI: Potilaan osallisuus pro re nata -lääkehoidossa

oikeuspsykiatrisessa sairaalahoidossa

Väitöskirja, 150 s.

Hoitotieteen tohtoriohjelma

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TIIVISTELMÄ

Potilaiden osallisuutta on korostettu mielenterveysshoitotyössä sekä ihmisoikeuksien että hoidon laadun näkökulmista. Tämän tutkimuksen tarkoituksena oli kuvata ja selittää potilaan osallisuutta pro re nata (PRN, ”tarvittaessa annosteltava”) -lääkehoidossa oikeuspsykiatrisessa sairaalahoidossa. Tuotettua tietoa voidaan käyttää ihmiskeskeisen oikeuspsykiatrisen hoidon kehittämisessä.

Tutkimuksessa oli kolme vaihetta. Ensimmäinen vaihe oli integratiivinen katsaus, jossa aiempi kirjallisuus haettiin elektronisesti ja manuaalisesti. Aineisto analysoitiin jatkuvan vertailun menetelmällä. Toinen vaihe oli dokumenttianalyysi potilasasiakirjoihin vuoden ajalta. Aineisto analysoitiin tilastollisilla menetelmillä. Kolmas vaihe oli yksilöhaastattelut potilaille ja ryhmähaastattelut sairaanhoitajille. Aineisto analysoitiin induktiivisella sisällönanalyysillä. Empiiriset tutkimusvaiheet toteutettiin suomalaisessa oikeuspsykiatrisessa sairaalassa vuosina 2018–2020.

Kirjallisuuskatsaukseen valikoituneiden tutkimusten (n=16) perusteella potilaan osallisuus PRN-lääkehoidossa tarkoitti potilaiden ja ammattilaisten jaettua päätöksentekoa. Osallisuus edellytti potilaalta motivaatiota ja toimintakykyä. Aikaisempaa tietoa potilaan osallisuudesta PRN:ssä suunnittelun ja arvioinnin sekä oikeuspsykiatrisen hoidon näkökulmista oli vähän. Potilasasiakirjojen (n=67) analyysi osoitti, että PRN-lääkkeitä oli käytetty sekä psyykkisiin että fyysisiin syihin usein, tavallisimmin potilaiden pyynnöstä ja yleensä yhteisymmärryksessä annostellen. Potilaat olivat suunnitelleet useita vaihtoehtoja PRN-lääkkeille, mutta näiden käyttö oli kirjaamisen perusteella vähäistä. Arviointi, etenkin potilaan näkökulmasta, puuttui usein. Haastatellut potilaat (n=34) ja sairaanhoitajat (n=19) näkivät oikeuspsykiatrisen hoidon erityisenä suhteessa potilaan osallisuuteen PRN-lääkehoidossa. Potilailla oli yksilöllisiä lähtökohtia PRN-lääkehoitoonsa. Heidän roolinsa yhteistyössä ammattilaisten kanssa oli vakiintumaton. Potilaat halusivat itse päättää PRN:n käytöstä ja hoitajat rajoittivat keskusteluja konfliktien välttämiseksi.

Lisätutkimus ja entistä systemaattisemmat lähestymistavat potilaan osallisuuden tukemiseksi ovat tarpeen etenkin PRN-lääkehoidon suunnittelussa ja arvioinnissa. Sekä potilaan että terveysalan ammattilaisten asiantuntijuus ovat tärkeitä laadukkaan hoidon toteuttamiseksi.

AVAINSANAT: Dokumenttianalyysi, oikeuspsykiatrisen sairaalahoidon, haastattelu, integratiivinen kirjallisuuskatsaus, mielenterveysshoitotyö, hoitotyön kirjaaminen, potilaan osallisuus, ihmiskeskeinen hoitotyö, PRN-lääkehoito

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Abbreviations

APA	American Psychological Association
CINAHL	Cumulative Index of Nursing and Allied Health Literature
COST	European Cooperation in Science & Technology
ETENE	The National Advisory Board on Social Welfare and Health Care Ethics
GAF	Global Assessment of Functioning
GDPR	General Data Protection Regulation
IBM Corp	International Business Machines Corporation
ICN	International Council of Nurses
JBI	Joanna Briggs Institute
NICE	National Institute for Health and Care Excellence
NY	New York
OECD	Organisation for Economic Co-operation and Development
PRN	Pro re nata
QSR	Qualitative research software developer
SD	Standard deviation
TENK	Finnish National Board on Research Integrity
THL	National Institute for Health and Welfare
UK	United Kingdom
UN	United Nations
USA	United States of America
V-RISK-10	Violence risk screening tool
WA	Washington
WHO	World Health Organization
WMA	World Medical Association

List of Original Publications

This dissertation is based on the following original publications, which are referred to in the text by their Roman numerals:

- I Hipp, K., Kuosmanen, L., Repo-Tiihonen, E., Leinonen, M., Louheranta, O. & Kangasniemi, M., 2018. Patient participation in pro re nata medication in psychiatric inpatient settings: An integrative review. *International Journal of Mental Health Nursing*, 27(2), p. 536–554.
- II Hipp, K., Repo-Tiihonen, E., Kuosmanen, L., Katajisto, J. & Kangasniemi, M., 2020. PRN medication events in a forensic psychiatric hospital: A document analysis of the prevalence and reasons. *International Journal of Forensic Mental Health*, 19(4), p. 329–340.
- III Hipp, K., Repo-Tiihonen, E., Kuosmanen, L., Katajisto, J. & Kangasniemi, M., 2021. Patient participation in pro re nata medication in forensic psychiatric care: A nursing document analysis. *Journal of Psychiatric and Mental Health Nursing*, 28(4), p. 611–621.
- IV Hipp, K. & Kangasniemi, M., 2021. Patient participation in pro re nata medication in forensic psychiatric care: Interview study with patients and nurses. *International Journal of Forensic Mental Health*. doi: 10.1080/14999013.2021.1965267. Advance online publication.

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1 Introduction

Patient participation in pro re nata (PRN, “as-needed”) medication is based on universal human rights, such as dignity, freedom of opinion, and the right to life and liberty, that apply to all persons (Constitution of Finland 731/1999; UN, 2007). However, people with severe mental health illness have been found to be vulnerable to violations of their rights (UN, 2017; Vormaa et al., 2020; WHO, 2018b). The convention on the rights of persons with disabilities (UN, 2007) states that they should have opportunities to make their own choices and to be actively involved in the decision-making concerning them. In several countries, patient participation also has legitimacy (Jørgensen & Rendtorff, 2018; Nilsson et al., 2019; Storm & Edwards, 2013; Tambuyzer et al., 2014). In Finland, the right of patients to self-determination has been regulated (Act on the Status and Rights of Patients 785/1992), and having a mental illness or being involuntarily hospitalized does not abolish this right (Seppänen et al., 2018; Seppänen & Eronen, 2012). In these circumstances, care needs to be carried out in cooperation and mutual understanding with the patient as far as possible (Mental Health Act 1116/1990).

Patient participation is a concept that refers to the possibilities for patients to actively influence and engage in the decision-making about their care through an equal dialogue attuned to their preferences and potentials and a combination of experiential and professional expertise (Castro et al., 2016). Patient participation has been recognized as a key determinant of high-quality care (OECD, 2017; WHO, OECD & the World Bank, 2018), and it is strongly highlighted in clinical guidelines (Boivin et al., 2010; WHO, 2016), including mental health guidelines (NICE, 2014; Schizophrenia: Current Care Guidelines, 2020). In addition to it being an ethical right (Duncan et al., 2010; ETENE, 2001; Lindberg et al., 2019; Tambuyzer et al., 2011), patient participation can have various positive impacts on clinical practice and treatment outcomes (Castro et al., 2016; Fønhus et al., 2018; Huang et al., 2020; Jørgensen & Rendtorff, 2018; Lindhiem et al., 2014). For patients with severe mental illness, being genuinely involved in decisions can re-establish and preserve hope for recovery (Samuelsen et al., 2016; Turpeinen, 2018). Despite patient participation being a political talking point for decades (Declaration of Alma-Ata, 1978; Rothman, 2001), incorporating it into health care practices has been challenging (Angel &

Fredriksen, 2015; Brooks et al., 2015; Dent & Pahor, 2015), especially in mental health care (Beitinger et al., 2014; Huang et al., 2020; Stomski & Morrison, 2017). Through the user and survivor movement in mental health, the voice of a traditionally silent patient group is gradually gaining strength (Rose & Lucas, 2007; Patel et al., 2018). Nonetheless, this movement has hardly reached forensic psychiatric patients, and they have remained an invisible and vulnerable group in terms of patient participation. Just recently, concerns have been raised over patients' fundamental human rights being jeopardized in forensic psychiatric care (Perlin, 2016; Sampson et al., 2016; Scarpa et al., 2019; Seppänen et al., 2018; Tomlin et al., 2018). It has been argued that forensic services have lagged behind in implementing patient participation in their care as part of evidence-based practices (Nicholls & Goossens, 2017).

Forensic psychiatry is a sub-specialty that involves treating individuals with mental disorder and a propensity for antisocial or violent behavior; this includes offenders who have been found not criminally responsible and patients whose aggressive behavior is unmanageable in other hospitals (Crocker et al., 2017; Edworthy et al., 2016; Gordon & Lindqvist, 2007; Howner et al., 2018). The complexity of these patients' problems usually leads to long-term admission (Howner et al., 2020; Sampson et al., 2016). It has been stated that, to progress with recovery, patients need to be involved in their care (Scarpa et al., 2019; Selvin et al., 2016, 2021; Tapp et al., 2013). However, implementing patient participation in this context has proven challenging due to the severity and persistence of patients' mental illnesses (Livingston et al., 2013; Losier et al., 2017; Magnusson et al., 2020; Selvin et al., 2021) and the restrictive nature of forensic psychiatric care (Livingston et al., 2012, 2013; Magnusson et al., 2020; Scarpa et al., 2019; Selvin et al., 2021; Söderberg et al., 2020). Patients in forensic psychiatric care have been discontent with the extent to which they have been involved in their care (Lundqvist & Schröder, 2015; Magnusson et al., 2020; Schröder et al., 2016; Swedish Association of Local Authorities and Regions, 2018).

When mental health patients have been interviewed about their views on their participation, the patients have especially focused on issues related to medication care (Stomski & Morrison, 2017). Psychotropic medication plays a significant role in the treatment of severe mental illnesses (American Psychiatric Association, 2021; Barnes et al., 2020; Owen et al., 2016; Schizophrenia: Current Care Guidelines, 2020). Further, physical health problems are more common among people with mental health illnesses than the general population (Hert et al., 2011; WHO, 2018a), indicating a need for somatic medications. In addition to regular medication, pharmacological treatment includes PRN medication that is used unscheduled when acute symptoms arise (Vaismoradi et al., 2018). PRN has been found to be prevalent in mental health care (Barlow, 2014; Vaismoradi et al., 2018). Thus, it is justified to

explore patient participation in PRN practices. Previous studies on patient participation in medication treatment in mental health care have focused on regular medication (Mistler & Drake, 2008; Sullivan & Rae, 2014), particularly on prescribing antipsychotic medication (Pedley et al., 2018; Shepherd et al., 2014; Torrecilla-Olavarieta et al., 2020). However, PRN medication differs significantly from regular medication; each PRN administration is preceded by identifying and assessing the need for medication and making a decision between PRN and alternative solutions to the acute situation (Wright et al., 2012).

Patient participation in prescribing or administration of PRN medication in mental health inpatient care has been emphasized (Baker et al. 2007; Wright et al., 2012) but knowledge on how this is achieved is fragmented. Also, while previous literature has focused on psychotropic PRN, this thesis examines all PRN medications. In inpatient care, physicians are responsible for prescribing pharmacological treatment, but nurses, guided by physicians' prescriptions, often must make the assessment of patients' symptoms and the decision of whether or not to administer PRN (Barlow, 2014). So, patient participation is an issue for both physicians and nurses. Patients' possibilities to influence the PRN decisions have been found to be limited (Baker et al., 2007; Barr et al., 2018; Cleary et al., 2012), and PRN has included staff-related practices (Price & Baker, 2013; Usher et al., 2009). This is in dissonance with the people-centered health care paradigm which considers patients' individual needs and expectations in humane and holistic ways and provides patients with the education and support needed to make decisions and participate in their care (WHO, 2015). This approach has also been emphasized in forensic psychiatric care (Nicholls & Goossens, 2017). Therefore, this thesis focuses on patient participation in all their PRN treatment in forensic psychiatric hospital. This study summarizes previous international knowledge on patient participation in PRN in psychiatric inpatient care and explores how it is perceived and realized in a forensic psychiatric hospital based on nursing documentation and the perspectives of patients and registered nurses. The overall aim of this study is to produce new descriptive and explanatory knowledge on patient participation in PRN that could be used to develop people-centered forensic psychiatric care.

2 Review of the literature

Patient participation is a generic term for a phenomenon that takes on certain connotations depending on the context, including the contexts of mental health and forensic psychiatric care. To construct the conceptual framework for the study, this chapter first describes forensic psychiatric inpatient care in Finland, and PRN as part of the care of patients with mental health disorders. Second, patient participation is defined as a concept, and third, its special features in forensic psychiatric care are described. Literature on patient participation includes synonyms and related concepts because they are largely overlapping. Finally, this chapter summarizes and highlights gaps in knowledge in the current literature.

The literature in this chapter has been collected from scientific electronic databases throughout the study process with search terms related to patient participation, PRN medication and forensic psychiatric care (Appendix 1). Searches have been limited to results in Finnish, English and Swedish languages. In addition to the research literature, national and international policy documents, regulations and guidelines related to the topic have been utilized in this chapter.

2.1 Forensic psychiatric care

Forensic psychiatry is a sub-specialty of medicine that is based on knowledge of relevant legal issues, criminal and civil justice systems, mental health systems and the relationship between mental disorder, antisocial behavior and offending. Its purpose is to assess and treat offenders with mental disorder and others requiring similar services. (Nedopil et al., 2015.)

Like all fields of health care, forensic psychiatric care is based on patients' needs. Severe mental illnesses and complex problems of patients require long-term comprehensive care (Dutta et al., 2016; Hare Duke et al., 2018; Howner et al., 2020; Sampson et al., 2016). The aim of forensic psychiatric care is to reduce the symptoms and negative consequences of patients' mental illnesses and increase their psychosocial functioning (Müller-Isberner et al., 2017).

2.1.1 Forensic psychiatric inpatient care in Finland

Based on the Mental Health Act (1116/1990), in Finland, patients can be admitted to forensic psychiatric units for three reasons. First, a court can order an offender to a forensic psychiatric examination of the responsibility of a crime or crimes and the need for treatment. Annually, approximately 100 persons (86% male, 3% underaged in 2020) are ordered to undergo this type of examination. The sentence of irresponsible offenders is waived, and most are forced to receive treatment. (THL, 2020a, 2020b.)

A second reason for forensic psychiatric hospitalization is for the treatment of forensic patients, i.e., when offenders have been found not guilty by reason of insanity and are in need of psychiatric treatment (Mental Health Act 1116/1990). Each year, about 30–35 persons are ordered to be admitted to state hospitals after a psychiatric examination (THL, 2020a) and approximately 400 patients are treated in forensic psychiatric care (Seppänen et al., 2020). Psychiatric treatment can be enforced for adults if the person is: i) diagnosed as mentally ill, ii) the illness is at risk of worsening if not treated and/or the person might endanger their own and/or others' health or safety, and iii) no other services suffice (Mental Health Act 1116/1990). A compulsory detention of a psychiatric patient is a medical approach targeting the best interest of the patient (Putkonen & Völlm, 2007). The need for forced care in a forensic psychiatric hospital is reviewed in administrative court every six months, based on psychiatrists' reports, and discharge is decided by the Board for Forensic Psychiatric Affairs at the National Institute for Health and Welfare (THL) (Seppänen et al., 2020). The length of admission in a forensic psychiatric hospital is, on average, seven years (Niuvanniemi Hospital, 2019; Vanha Vaasa Hospital, 2019).

Third, patients whose treatment is considered too dangerous or difficult to carry out in a municipal hospital can be transferred to a forensic psychiatric hospital (Mental Health Act 1116/1990).

In Finland, forensic psychiatric patients can be treated at two state-run hospitals and on forensic psychiatric wards within municipal hospitals (Sampson et al., 2016; Seppänen et al., 2020; Tenkanen et al., 2011). The forensic psychiatric hospitals provide specialized forensic services for all of Finland (Kuosmanen et al., 2019) with a total of about 450 beds (Niuvanniemi Hospital, 2019; Vanha Vaasa Hospital, 2019).

Patients' treatment follows the national Current Care Guidelines (Niuvanniemi Hospital, 2019; Tenkanen et al., 2011). The majority of forensic psychiatric patients have been diagnosed with schizophrenia (Kuosmanen et al., 2013). The care guideline for schizophrenia highlights effective and safe dosage of antipsychotic medication, psychoeducation, cognitive behavioral therapy and other individual treatment interventions, psychosocial rehabilitation, occupational therapies, and

evaluation and promotion of physical health (Schizophrenia: Current Care Guidelines, 2020). In forensic psychiatric care, patients' non-pharmacological treatment especially emphasizes the practice of daily living skills and social skills (Tuppurainen et al., 2014).

Patients' care in forensic psychiatric care is based on individual treatment plans. Health care professionals are responsible for the documentation of necessary information (Act on the Status and Rights of Patients 785/1992; Health Care Professionals Act 559/1994). In inpatient care, this includes, for example, reasons for treatment decisions and descriptions of their implementation, pharmacological care, restrictions of patient autonomy, ineffectiveness or adverse effects of interventions, as well as regular observations of the patient's condition and any changes (Decree on Health Records 298/2009). Details of patients' care are documented in electronic health records (Saranto & Kinnunen, 2009).

2.1.2 PRN medication as part of psychiatric inpatient care

PRN refers to medication that is used as required for acute physical or psychiatric symptoms, rather than as regular daily doses at specific times (Vaismoradi et al., 2018, 2020). Psychotropic PRN medication, i.e., those capable of affecting the mind, emotions and behavior, is frequently used as a clinical intervention in mental health inpatient care; about 80% of patients receive this medication in acute psychiatric wards (Baker et al., 2008). In a medium secure unit, 52% of 42 patients had used PRN over the 6-month period (Hales & Gudjonsson, 2004). One study reviewed sedative psychotropic PRN in a forensic rehabilitation unit and found that 37% of 242 patients received such medication within a two-week period (Haw & Wolstencroft, 2014). In forensic settings, psychotropic PRN has been prescribed for three-quarters of patients (Hales & Gudjonsson, 2004; Haw & Wolstencroft, 2014).

The most frequently used PRN psychotropics have consisted of benzodiazepines and antipsychotics, in both acute mental health units (Akram et al., 2014; Baker et al., 2008; Martin et al., 2017; Thapa et al., 2003; Yoshida et al., 2013) and forensic psychiatric care (Hales & Gudjonsson, 2004; Haw & Wolstencroft, 2014). The most frequently prescribed indication for use of psychotropic PRN medication has been agitation (Baker et al., 2008; Haw & Wolstencroft, 2014; Martin et al., 2017, 2018a; Wright et al., 2012). Other common reasons reported have been anxiety, aggressive behavior, sleeping problems and psychotic symptoms (Akram et al., 2014; Martin et al., 2017; Wright et al., 2012). In forensic settings, half of the sedative PRNs have been found to be administered for agitation or unsettled behavior, followed by 18% for violence (Haw & Wolstencroft, 2014). For forensic mental health nurses, PRN has been the most commonly documented intervention to prevent patient aggression (Maguire et al., 2018). However, research suggests that PRN can be discontinued in

forensic settings without an increase of adverse consequences (Friedman et al., 2012; Smith et al., 2015; Thapa et al., 2003), and further, this change has even improved hospital safety (Smith et al., 2008).

Research focusing on the effectiveness of psychotropic PRN has found varying results (Baker et al., 2008). Based on literature, patients and nurses alike have found PRN to be a useful treatment method (Baker et al., 2006; Martin et al., 2018b), but the scientific evidence on its effectiveness is weak (Douglas-Hall & Whicher, 2015; Hilton & Whiteford, 2008; Yoshida et al., 2013). Further, concerns have been raised about inappropriate use as well as safety risks, such as polypharmacy, related to PRN (Fujita et al., 2013; Hayes & Russ, 2016; Hilton & Whiteford, 2008). It has also been suggested that PRN may benefit the staff more than it does patients, as it is considered an easy solution (Hilton & Whiteford, 2008) or a means to control or quiet down the patients (Baker et al., 2006; Hilton & Whiteford, 2008; Thapa et al., 2003). In fact, nurses have reported using PRN for these very purposes (Jimu & Doyle, 2019). On the other hand, patients may seek PRN without medical indication, for example, when bored or striving to become inebriated (Cleary et al., 2012). This drug-seeking behavior has been associated with substance misuse history, an issue especially prevalent in forensic psychiatric care (van der Kraan et al., 2014; Kuivalainen et al., 2017; Nicholls & Goossens, 2017).

Concerns have also been raised about over-reliance on PRN (Barr et al., 2018; Friedman et al., 2012; Wright et al., 2012) and using it instead of considering non-pharmacological alternatives (Jimu & Doyle, 2019; Martin et al., 2018a). Based on nursing notes reviewed in a forensic unit in Canada, PRN was the most common solution to a problematic situation (Perron & Holmes, 2011). Similarly, based on an audit of patients' care plans at a secure hospital, PRN was one of the most frequently suggested interventions for managing escalation (Hallett et al., 2016). For forensic psychiatric patients, over-reliance on PRN medication can be a barrier to developing coping skills and strategies needed to be discharged and for living in a community setting (Friedman et al., 2012).

PRN is also used for physical symptoms (Vaismoradi et al., 2020), but research on PRN for physical reasons in mental health care is sparse. In a report from Wales, PRN was prescribed for physical reasons to just over half of forensic psychiatric patients (Justice Health and Forensic Mental Health Network, 2018). The most prevalent physical indication for PRN has been pain (Goedhard et al., 2007; Justice Health and Forensic Mental Health Network, 2018). Despite the dearth of research, an increased need for medication for physical reasons in forensic psychiatric patients can be assumed based on the evidence of physical health problems in this patient group; people with severe mental illness have physical health conditions more commonly than the general population (Hert et al., 2011), and their average mortality is three times higher (WHO, 2018). Physical health problems are especially prevalent

among individuals receiving inpatient care (Walker et al., 2015) and forensic psychiatric care (Nicholls & Goossens, 2017; Ojansuu et al., 2018). In Wales, 83% of 66 forensic patients were overweight or obese (Justice Health and Forensic Mental Health Network, 2018), and a Swedish study concluded that the physical state of a sample of 28 forensic psychiatric patients was poor (Bergman et al., 2020). On the other hand, prolonged treatment may have an overall protective effect in this patient group (Ojansuu et al., 2015) when proper physical health care is assured (Ojansuu et al., 2018).

In inpatient care, PRN treatment is managed by professionals. Physicians are responsible for patients' pharmacological treatment, including PRN (Health Care Professionals Act 559/1994; Hilton & Whiteford, 2008). Nurses are primarily involved in the administration of medication in forensic psychiatric care (Barr et al., 2018; Hales & Gudjonsson, 2004) and other hospital settings (Hilton & Whiteford, 2008; Hughes & Blegen, 2008; Jimu & Doyle, 2019). The administration follows prescribed indications and instructions on maximum dosages and frequencies (Hilton & Whiteford, 2008; NICE, 2015; Wright et al., 2012). Patient participation has been emphasized in the planning and implementing of PRN in patients' care (Baker et al., 2007; Delaney, 2020; Wright et al., 2012).

2.2 Patient participation in forensic psychiatric care

The roots of patient participation in PRN in forensic psychiatric care rely on the concept of patient participation in health care research and policies.

2.2.1 Concept of patient participation

Patient participation is a concept that refers to equal partnership and collaboration between patients and health care providers that involves a dialogue and information sharing. Patient participation includes treatment based on patients' individual preferences; the patient is actively engaged and able to take responsibility in influencing their care through shared decision-making (Table 1).

Patient participation as well as its related concepts, such as involvement, engagement, empowerment, partnership and person-centeredness, lack precise definitions (Castro et al., 2016; Fumagalli et al., 2015; Halabi et al., 2020; Jørgensen & Rendtorff, 2018); the terms are used interchangeably and their definitions overlap (Castro et al., 2016; Fumagalli et al., 2015; Tambuyzer et al., 2011). Further, the meaning of patient participation can vary from individual to individual among both patients and health care providers (European Commission, 2012; Magnusson et al., 2020).

Table 1. Definitions of patient participation based on concept analyses.

CONCEPT	DEFINITION
Patient participation	<p><i>The antecedents of patient participation are: an egalitarian communication system; respect for individuality; reciprocity in the nurse-patient relationship; nurses' competence in managing with or without the security afforded by hierarchy; recognition that a positive benefit will accrue; a desire from the nurse to relinquish and from the patient to assume a degree of power, control and responsibility; access for patients to an appropriate information and knowledge; patient's understanding of information and knowledge. (Cahill, 1996)</i></p> <p><i>"Patient participation in nursing practice can be defined as an established relationship between nurse and patient, a surrendering of some power or control by the nurse, shared information and knowledge, and active engagement together in intellectual and/or physical activities." (Sahlsten et al., 2008, p. 2)</i></p> <p><i>"Individual patient participation revolves around a patient's rights and opportunities to influence and engage in the decision making about his care through a dialogue attuned to his preferences, potential and a combination of his experiential and the professional's expert knowledge." (Castro et al., 2016, p. 1989)</i></p> <p><i>"Person-centred participation in healthcare was found to be based on patients' experiences, values, preferences and needs in which respect and equality were central. It manifested itself via three intertwined phases: the human-connection phase, the phase of information processing and the action phase." (Thórarinsdóttir & Kristjánsson, 2014, p. 129)</i></p> <p><i>"The essence of patients' participation is learning, the caring relationship and reciprocity." (Nilsson et al., 2019, p. 249)</i></p>
Patient participation in mental health	<p><i>"Patient involvement in MHC [mental health care] means involvement in decision making and active participation in a range of activities (e.g. planning, evaluation, care, research, training, recruitment) starting from the expertise by experience of the person, in collaboration with and as equal partners of professionals." (Tambuyzer et al., 2014, p.142)</i></p> <p><i>The defining attributes of service user involvement are: "a person-centred approach, informed decision making, advocacy, obtaining service user views and feedback and working in partnership". (Millar et al., 2016, p. 209)</i></p>

Ladder of Citizen Participation by Arnstein (1969, 2019) is a pioneering model of participation in which the level of participation is described in eight rungs from nonparticipation to citizen power and control (Figure 1). A number of taxonomies have since been developed to illustrate patient participation in health care. Grounded by earlier models, Thompson (2007) conceived a continuum of patient power (Figure

1). Similar to Arnstein's ladder, the level of participation is associated with patients' power to influence decision-making. Paternalism has been considered to involve tokenistic participation in which professionals' expertise is stressed over patients', and patients are involved to the degree of receiving information and giving their consent. At the level of professional-as-agent, patients' preferences are noted in decision-making, but the decisions still lay on professionals. Shared decision-making means that patients and professionals share both the process and outcomes of decisions. At the highest level of patient participation, the technical expertise and the responsibility of final decisions are transferred to the patient.

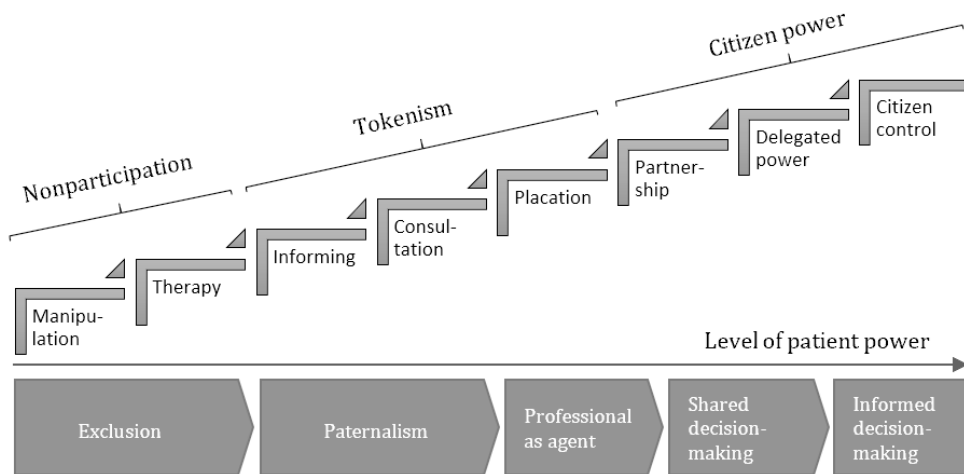


Figure 1. Levels of patient participation modified from Arnstein (1969) and Thompson (2007).

In health care, the highest level of patient participation is commonly neither achievable nor desirable (Angel & Fredriksen, 2015; Thompson, 2007). The optimal level of patient participation should rather be considered situationally and individually (Angel & Fredriksen, 2015), including patients' views on the desired extent of participation (Thompson, 2007). Professionals may struggle to identify the adequate level of participation in diverse health care situations (Entwistle & Watt, 2006; Stomski & Morrison, 2017), and their views on the role of patients can also be affected by organization culture (Dent & Pahor, 2015). This can result in situations in which the patient feels neglected (Stacey et al., 2016). However, patients can also experience being pressured or even forced to participate (Thórarinsdóttir & Kristjánsson, 2014). Thus, the patient and professional may have different opinions on which step of the ladder the patient should stand on.

2.2.2 Special features of patient participation in forensic psychiatric inpatient care

Patient participation in mental health care means that the care focuses on patients' individual goals (Jørgensen & Rendtorff, 2018), patients' voices and preferences are heard (Burn et al., 2019; Duncan et al., 2010; Edin Renberg & Sandlund, 2019; Giacco et al., 2018; Huang et al., 2020; Millar et al., 2016), and they are considered as experts on their own life (Beitinger et al., 2014; Drivenes et al., 2019; Hilden et al., 2020; Jørgensen & Rendtorff, 2018; Slade, 2017). Patient participation in forensic psychiatric inpatient care has been considered peculiar because of patients' decreased insight and mental capacity (Hörberg, 2018; Markham, 2020; Selvin et al., 2021), and it has even been questioned if forensic psychiatric patients can be involved in any decision-making (McKeown et al., 2016; Markham, 2020; Söderberg et al., 2020). Patient participation in this setting is also challenged by the restrictive nature of care (Scarpa et al., 2019; Tomlin et al., 2018, 2020) that is required due to patients' high risk of violence (Magnusson et al., 2020; Markham, 2020). However, patient participation has been defined as a special goal in developing best practice forensic psychiatric care (COST, 2021; Scarpa et al., 2019). Also, it is included in the patient-centered approach that has been recognized as one of the essential dimensions of forensic services (Nicholls & Goossens, 2017). Patient participation has been described as a method to promote patients' recovery processes (Hörberg, 2015; Selvin et al., 2021; Tapp et al., 2013) and abilities to live independently (Scarpa et al., 2019).

Forensic psychiatric patients in patient participation

Patients in forensic psychiatric units have reported the willingness to be involved (Marklund et al., 2020; Møllerhøj & Stølan, 2018) and take responsibility for their own care (McKeown et al., 2016). Patients have also suggested that they have opinions on and wishes for their care (Marklund et al., 2020). Based on mental health research, patients have individual needs for and perspectives on participation (Tambuyzer et al., 2011). Most patients desire at least some level of participation (Hamann et al., 2010; Huang et al., 2020).

However, forensic psychiatric patients' participation preferences are situationally inconsistent (Selvin et al., 2021), and some patients are reluctant to take an active role and responsibility (Magnusson et al., 2020). Their motivation can be decreased especially in times of poor mental health (Selvin et al., 2016), or if sedated from medication. In addition, patients may not trust their capacity to make decisions (Barnao et al., 2015), or they may have become accustomed to a passive role during long-term hospitalization (Livingston et al., 2012). Further, mental health patients' desire to participate varies between countries, suggesting that motivation is

associated with cultural and social factors (Bär Deucher et al., 2016). Patients may hesitate to express their thoughts if they have negative experiences of being labeled in such situations (Huang et al., 2020), if they expect that they will not be genuinely heard (Jansen & Hanssen, 2017), or if they are worried that it could lead to receiving less support in the recovery process (Jørgensen & Rendtorff, 2018). Forensic psychiatric nurses have noted that their important task is to encourage patients to be involved (Selvin et al., 2021; Söderberg et al., 2020; Olsson & Schön, 2016), and patients have appreciated such support (Marklund et al., 2020; Selvin et al., 2016). A recent literature review found that patients with severe mental illness usually prefer being informed and included in negotiations, but a minority of patients want to make the final decisions (Huang et al., 2020). However, health care providers can sometimes overestimate patients' preferences to be involved (Hamann et al., 2010).

Patients in forensic psychiatric care suffer from severe mental disorders (Nicholls & Goossens, 2017; Putkonen & Völlm, 2007), such as schizophrenia, which can seriously affect their ability to participate (Beitinger et al., 2014; Hamann et al., 2011b; Huang et al., 2020; Jørgensen & Rendtorff, 2018; Stomski & Morrison, 2017; Tambuyzer et al., 2011). Based on the evidence, severe psychotic symptoms can impair patients' decisional capacity (Calcedo-Barba et al., 2020; Larkin & Hutton, 2017). Thus, professionals need to determine patients' involvement based on their current state (Chong, 2013; Huang et al., 2020; Stomski & Morrison, 2017). Forensic psychiatric nurses have found that they need to take professional responsibility of incapable patients (Selvin et al., 2021), and patients have valued this temporary suspended responsibility (Tapp et al., 2013). Still, it has been argued that even severe mental illnesses do not prevent patients from participating (Hamann et al., 2020b), and most psychiatric patients are capable of making decisions on their care (Calcedo-Barba et al., 2020). However, mental health professionals have been concerned that impaired insight may make patients unable to make decisions (Huang et al., 2020) or that their decisions would be detrimental (Stomski & Morrison, 2017). In such situations, the professionals tend to exclude patients from involvement (Jørgensen & Rendtorff, 2018). Also, unwell patients can expect to be looked after more than participating (Slade et al., 2017; Stacey et al., 2016).

In mental health studies, patients' adequate knowledge has been recognized as an essential prerequisite to participating and influencing their care (Hilden et al., 2020; Stomski & Morrison, 2017). Patients expect professionals to provide information about their illness, treatment options (Hamann et al., 2010; Stomski & Morrison, 2017) and symptom management (Jørgensen & Rendtorff, 2018). However, patients have found that getting such education is insufficient in forensic psychiatric care (Segal et al., 2010). It is worth noting that mental health patients are increasingly gaining information themselves (Hilden et al., 2020), and sometimes their wishes are inconsistent with evidence-based practice (Hilden et al., 2020; Slade,

2017). In such situations, it is the responsibility of the professionals to explain why a patient's wishes cannot be fulfilled (Hilden et al., 2020).

Patient-nurse cooperation as a basis for patient participation

Forensic psychiatric patients commonly feel negatively about being hospitalized (Marshall & Adams, 2018), and they can have difficulties understanding and accepting the need for treatment (Askola et al., 2018; Livingston et al., 2012), which can result in them perceiving themselves as a victim subjected to coercion and punishment (Askola et al., 2018; Hörberg & Dahlberg, 2015; Møllerhøj & Stølan, 2018; Söderberg et al., 2020). Intrinsically, this is a challenging starting point for cooperative goalsetting and treatment planning.

Empathy and mutual trust in patient-nurse relationships have been highlighted in relation to patient participation in forensic psychiatric care (Magnusson et al., 2020; Selvin et al., 2021; Söderberg et al., 2020). Based on literature, trust is a troublesome phenomenon in the forensic psychiatric context. Studies have reported both patients' mistrust in staff (Askola et al., 2018) and nurses' mistrust in patients, especially related to their perceived manipulateness (Eivergård et al., 2019; Jacob, 2012; McKeown et al., 2016; Perron & Holmes, 2011). Indeed, some nurses have stated that they perceive patients as untrustworthy (Rose et al., 2011). Patients have valued being treated as equal human beings (Barnao et al., 2015; Gildberg et al., 2010; Marklund et al., 2020; Møllerhøj & Stølan, 2018), but they have felt stigmatized for their mental illness (Barnao et al., 2015; Mezey et al., 2010) and the offenses that they have committed (Askola et al., 2018; Marklund et al., 2020; Mezey et al., 2010; Møllerhøj & Stølan, 2018). Nurses have argued that they aim to see the person in the patients (Marshall & Adams, 2018; Perron & Holmes, 2011; Rose et al., 2011; Salzmänn-Erikson et al., 2016; Timmons, 2010). However, sometimes the crimes that patients have committed can affect nurses emotionally (Kumpula et al., 2019; Rose et al., 2011) and result in unequal possibilities for the patients to participate (Magnusson et al., 2020).

Challenges in patient participation have been associated with nurses' dual role. Health professionals in forensic psychiatric units have perceived that they have to balance between the roles of a carer and "a guard" (Söderberg et al., 2020; Timmons, 2010); whilst they emphasize with the patient and support them to participate, they also need to respect the structures, take responsibility of high-risk patients (Söderberg et al., 2020) and keep adequate distance (Hammarstöm et al., 2019; Jacob, 2012; Perron & Holmes, 2011). Further, from nurses' perspective, laws, rules and regulations have to be regarded in addition to patients' individual wishes (Magnusson et al., 2020; Selvin et al., 2021; Söderberg et al., 2020). A risk is that the nursing in practice focuses more on observing and controlling patients rather than

engaging them in a therapeutic relationship (Cashin et al., 2010; Hörberg, 2015, 2018; Jacob & Foth, 2013; Tomlin et al., 2018).

Studies depict forensic psychiatric care as a restrictive context in which patients' care includes control and boundaries (Cashin et al., 2010; Gildberg et al., 2010; Jacob et al., 2008; Livingston et al., 2012; Söderberg et al., 2020), and patients are expected to "behave" and obey the rules (Eivergård et al., 2019; Jacob, 2012; Losier et al., 2017; Selvin et al., 2016). On one hand, both patients and nurses have emphasized limit-setting in an appropriate manner for patients' unacceptable behavior (Maguire et al., 2014). On the other hand, patients' experiences of participation are often threatened by restrictions and compulsion (Askola et al., 2018; Barnao et al., 2015; Olsson & Schön, 2016; Tomlin et al., 2020); patients have felt that being subjected to rules has decreased their opportunities to make decisions about their lives (Marklund et al., 2020).

Care culture as a frame for participation

While illustrating the rung of therapy in the ladder of participation, Arnstein describes that individuals with mental illness are treated as powerless subjects being cured (Arnstein, 1969, 2019). A notable culture shift has since transformed the role of the mental health patient, and patient participation has been stressed as an imperative (Drake & Deegan, 2009; Hilden et al., 2020; Jørgensen & Rendtorff, 2018; Markham, 2020; Millar et al., 2016). However, a shift in paradigm towards engaging and empowering patients rather than considering them as passive recipients has been slow in forensic mental health services (Hörberg, 2018; Nicholls & Goossens, 2017). Paternalism and power imbalances are commonly noted in forensic psychiatric studies. This means that decisions on patients' care have been significantly dependent on professionals (Eidhammer et al., 2014; Haines et al., 2018; Livingston et al., 2012, 2013; Magnusson et al., 2020). Patients have felt that their opinions are commonly ignored or opposed and that their care is predetermined to follow a certain path (Marklund et al., 2020). For example, a study conducted in a medium secure forensic hospital in the UK found that patient participation was only at a tokenistic level; patients were invited to team meetings at the end, when all the decisions had been already made and patients only had the opportunity to give feedback and ask questions (Haines et al., 2018).

Patients' opportunities to influence their care have been studied especially in relation to professionals' and patients' collaboration in composing care plans. So that the care is based on patients' individual needs, patients must have opportunities to articulate their perceptions and thoughts (Hörberg, 2015, 2018). Collaboration in care plans has been noted to be a significant aspect of patient participation in forensic psychiatric care (Magnusson et al., 2020; Papapietro, 2019; Scarpa et al., 2019).

Patients have valued being permitted to join planning meetings and when their opinions are truly heard and respected (Selvin et al., 2016; Marklund et al., 2020). Professionals have emphasized patient participation in treatment planning from the viewpoint of maintaining hope (Turpeinen, 2018). However, patient participation in the planning of their care has not been adequately implemented in forensic psychiatric facilities (Nicholls & Goossens, 2017). Patients have felt that they have been consulted and told what to do more than included in shared decision-making (Barnao et al., 2015). They have also reported having unmet needs in relation to treatment (Segal et al., 2010). A large-scale audit revealed that, instead of including all patients in treatment planning as outlined, only 40% of patients had contributed to their plan (Hallett et al., 2016). Further, patients have experienced difficulty in expressing their opinions disagreeing with professionals (Askola et al., 2018; Selvin et al., 2016) and, in the study from UK, patients rarely used their opportunity to discuss in appointments (Haines et al., 2018). It has been found that patients with mental health conditions can struggle with communication with professionals (Giacco et al., 2018; Solbjør et al., 2011), hence professionals need to adjust their interaction with patients' abilities (Jørgensen & Rendtorff, 2018). Patient participation can also be promoted by advance directives that patients can make for future situations with retained competence (Murray & Wortzel, 2019; Patel et al., 2018).

Realization of patient participation in forensic psychiatric care

Forensic inpatients have highlighted the importance of participation (Tapp et al., 2013). Patients have perceived that patient participation means good communication and mutual trust with staff, being informed and involved, taking responsibility and having an influence in the treatment (Selvin et al., 2016). Mental health professionals have said that participation in forensic psychiatric care includes creating prerequisites for patients to be involved, assessing their current ability and promoting their progress in becoming more independent (Selvin et al., 2021; Söderberg et al., 2020).

In studies on patients' experiences of forensic psychiatric care, patient participation is commonly mentioned as a desirable and important aspect of good care (Askola et al., 2018; Barnao et al., 2015; Marklund et al., 2020; Selvin et al., 2016). Forensic psychiatric nurses, however, have indicated that full participation is probably unachievable in such restricted environments (Selvin et al., 2021; Söderberg et al., 2020). Nurses have noted that patients can and should be involved in the best possible way (Selvin et al., 2021), at least in minor matters (Söderberg et al., 2020). Still, the difficulty in implementing patient participation has resulted in an ever-present ethical challenge in forensic psychiatric nurses' work (Magnusson et al., 2020).

Based on literature, patient participation in forensic psychiatric care has not come to fruition. In interview studies, forensic psychiatric care nurses have noticed that patients may feel like they have few rights and options (Magnusson et al., 2020; Olsson & Schön, 2016). Similar findings have been reported from patient interviews (Barnao et al., 2015; Marklund et al., 2020; Tomlin et al., 2020). In a survey of quality of care conducted with forensic psychiatric patients in Denmark, patient participation was distinctly ranked as a lowest dimension (Schröder et al., 2016). In fact, when rated with a five-point Likert scale, patient participation scored quite similarly, with a range of 2.44–2.77, in three studies with forensic patients and staff (Livingston et al., 2012; Lundqvist & Schröder, 2015; Schröder et al., 2016). Conversely, a longitudinal survey study in New Zealand found that 80% of patients in an acute stream and 89% in a rehabilitation stream generally felt that they were involved in their care (Cannon et al., 2018).

2.3 Summary of the literature

Patient participation refers to collaboration, dialogue, negotiation and shared decision-making between patient and staff (Figure 2). Patient participation in PRN means that patient's views are heard when medication is planned, patients can initiate PRN, the need for medication is discussed and the decision is made in agreement, and patient's views on effectiveness of PRN are considered. Both the patient and staff have responsibilities in implementing patient participation. However, achieving patient participation is also connected to the context, and forensic psychiatric inpatient care has been found to be a peculiarly challenging environment for patient participation due to the severity of patients' mental health illnesses and the restrictive nature of forensic psychiatric care.

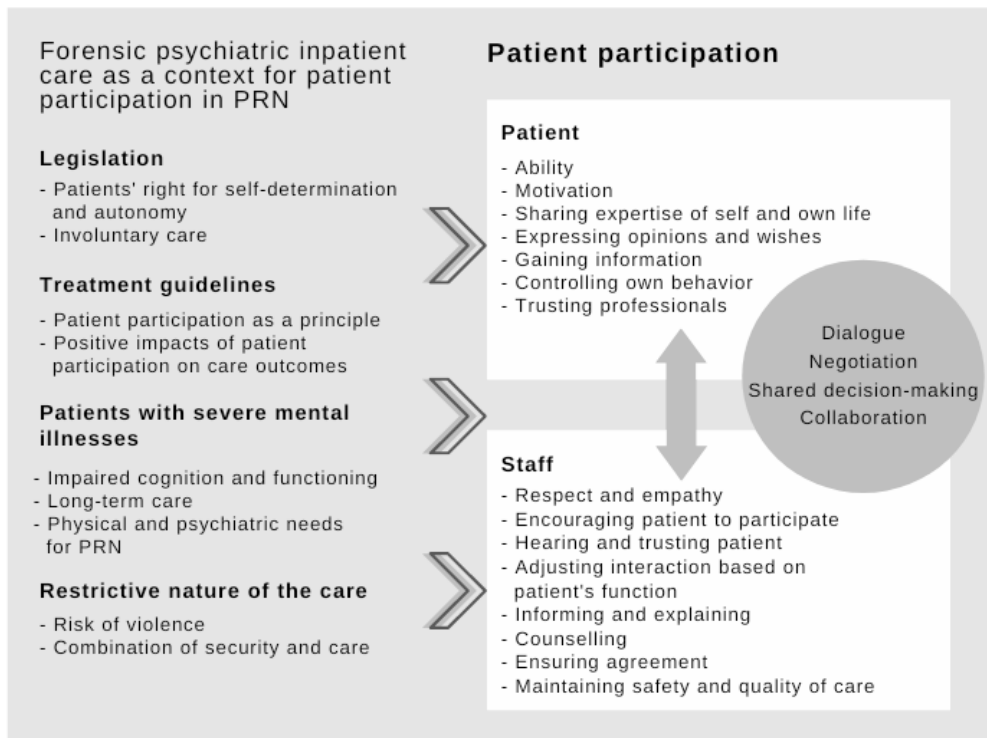


Figure 2. Summary of patient participation in contexts of PRN and forensic psychiatric inpatient care based on previous literature.

Patient participation has been inadequately achieved in forensic psychiatric care (Lundqvist & Schröder, 2015; Marklund et al., 2020). Nurses have found that patient participation is valuable as a theory, but it is hard to apply in compulsory care (Magnusson et al., 2020; Söderberg et al., 2020). Still, research on patient participation has rarely extended to this vulnerable patient group. However, interest in this topic seems to be increasing; four recently published interview studies have focused on patient participation in forensic psychiatric care, three from the viewpoint of professionals' (Magnusson et al., 2020; Selvin et al., 2021; Söderberg et al., 2020) and one from the patients' perspective (Selvin et al., 2016). The strength of the evidence is limited by relatively small sample sizes, and noteworthy, all four studies were conducted in Sweden. In addition, literature exists about patients' involvement in risk assessment and aggression management (Eidhammer et al., 2014; Hallett et al., 2016; Magnusson et al., 2020; Markham, 2020; Ray & Simpson 2019).

Previous studies on patient participation in mental health have focused on *what* patient participation is (Jansen & Hanssen, 2017; Tambuyzer et al., 2011) and how patients and providers feel about patients' active role rather than observing how it is

realized (Beitinger et al., 2014). Guidance on *how* to achieve patient participation in clinical practice is sparse (Jansen & Hanssen, 2017; Tambuyzer et al., 2011). It has been suggested that forensic staff needs tools and support to transfer and implement caring science in their daily work (Hörberg, 2015). Indeed, Marklund et al. (2020) highlighted a need for deeper understanding of how to involve patients in forensic psychiatric inpatient care.

While most PRN studies have been conducted in acute psychiatric units, PRN research from forensic psychiatric care is sparse (Baker et al., 2008; Haw & Wolstencroft, 2014). Previous studies have focused on prescriptions and use of sedative PRNs (Haw & Wolstencroft, 2014), effects of patients' ethnic differences on their PRN use (Hales & Gudjonsson, 2004), nurses' attitudes towards PRN (Barr et al., 2018) and whether reduction of psychotropic PRN could be achieved without adverse consequences (Friedman et al., 2012; Smith et al., 2015; Thapa et al., 2003). All these studies have investigated psychotropic PRN. Knowledge on PRN for physical symptoms is lacking. Filling this knowledge gap is important as physical health problems are common in individuals with mental health problems. Moreover, forensic psychiatric patients have reported unmet physical health needs (Justice Health and Forensic Mental Health Network, 2018; Segal et al., 2010), and patients with severe mental illnesses have experienced being excluded from decisions regarding their physical health (Huang et al., 2020). Knowledge on patient participation in PRN is fragmented. Further, several questions remain on patient participation in PRN in forensic psychiatric inpatient care.

3 Aims

The purpose of this study was to describe and explain patient participation in PRN medication in forensic psychiatric inpatient care. The overall aim was to produce new knowledge on patient participation in PRN and how it could be promoted. This knowledge can be used to develop forensic psychiatric care in response to an interest in people-centered care.

Research questions guiding the study are as follows:

- I) What is patient participation in PRN medication in psychiatric inpatient care based on previous knowledge? (Phase 1)
- II) How does patient participation in PRN medication occur in forensic psychiatric inpatient care? (Phases 2 and 3)
- III) What is patient participation in PRN medication treatment in forensic psychiatric inpatient care from the viewpoint of inpatients and nurses? (Phase 3)

4 Materials and Methods

This chapter describes the procedures that were conducted to address the research questions. To gain a comprehensive view on the multidimensional phenomenon of patient participation in PRN, a mixed methods approach was utilized. This included using both quantitative and qualitative study designs, triangulating research data, and synthesizing the results for this summary (Creswell & Plano Clark, 2017). The three study phases (Figure 3) produced different kinds of knowledge on the research topic. The earlier phases enabled and generated a basis for the following phases. The knowledge of patient participation in PRN was deepened throughout the study by the hermeneutical circle.

Due to the lack of a synthesis of previous knowledge on patient participation in PRN, an integrative review (Phase I) was conducted to identify aspects related to this topic (Lund et al., 2021). These aspects of participation were used as a basis for data collection in the empirical research.

In Phase II, retrospective document analysis (Gearing et al., 2006) on nursing documents with quantitative descriptive cross-sectional design was selected to describe PRN treatment and patients' participation in their PRN. Analysis of nursing documentation enabled the capture of detailed data (Martin & Stanford, 2020) that were unaffected by the research process (Bowen, 2009). As such, it demonstrated how PRN treatment occurred in the study hospital (Saranto & Kinnunen, 2009). Phase II produced understanding on how and why PRN was used in the hospital.

In Phase III, an interview study with a qualitative descriptive design (Doyle et al., 2020) was chosen to describe and explain patients' and registered nurses' perceptions about patient participation in PRN. This phase was needed because not all the aspects of patient participation in PRN identified in the literature could be explored from nursing documentation. Further, patients' and nurses' views were needed to confirm and explain the findings from previous phases. The interview study enabled the exploration of the phenomenon of patient participation in PRN as experienced by the stakeholders (DiCicco-Bloom & Crabtree, 2006; Malterud, 2011). Semi-structured interviews were chosen to allow the participants to freely express their thoughts and the interviewer to respond with further questions (Kallio et al., 2016).

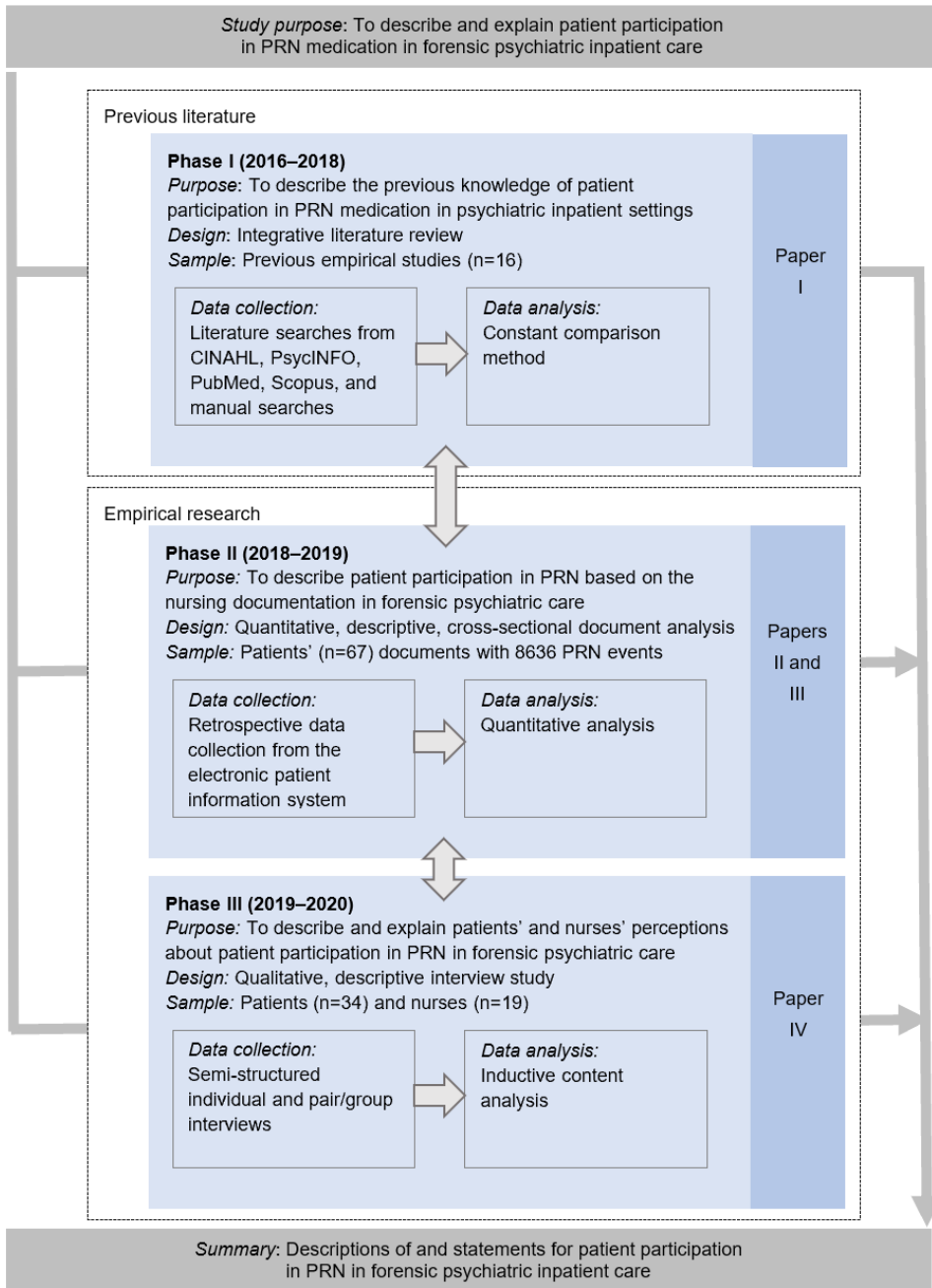


Figure 3. Study phases I-III.

4.1 Integrative review

Preliminary searches revealed inconsistency in methodologies in previous studies on patient participation in PRN. An integrative review enabled the synthesizing of original studies regardless of their designs (Lizarondo et al., 2020; Whitemore & Knafl, 2005). The integrative review was conducted through a five-stage process: identifying the problem, conducting a literature search, evaluating the data, analyzing the data and presenting the results (Whitemore & Knafl, 2005).

The electronic literature search was conducted in the databases CINAHL, PsycINFO, PubMed and Scopus. The literature search was limited to peer-reviewed papers published in English during the period 2006–2016. A time limitation was used due to the changes in the culture of psychiatric care over the last decades. Two researchers worked independently to review the eligibility of the generated results (N=490). Based on titles and abstracts, papers were selected if they reported an original qualitative, quantitative, or mixed methods study with the scope of PRN in inpatient mental health settings. Based on full texts, inclusion also required that studies considered the role of patients in PRN administration. An electronic search yielded eight (n=8) papers.

The electronic search was supplemented with manual searches using the reference lists of selected articles and eight academic journals with a focus in mental health care: *Archives of Psychiatric Nursing*, *International Journal of Mental Health Nursing*, *Issues in Mental Health Nursing*, *Journal of Psychiatric and Mental Health Nursing*, *Journal of Psychiatric Practice*, *Journal of Psychosocial Nursing and Mental Health Nursing*, *Journal of the American Psychiatric Nurses Association* and *Perspectives in Psychiatric Care*. Seven (n=7) papers were included. One (n=1) paper that met the inclusion criteria was found outside the selection process.

The selected papers (n=16) were evaluated by two researchers using the method-specific appraisal criteria developed by the Joanna Briggs Institute (JBI 2014) and no papers were excluded based on quality.

The data were analyzed using a constant comparative method (Boeije, 2002; Glaser, 1965; Whitemore & Knafl, 2005). First, the aims, methods, participants, findings, and quality scores of the selected papers (n=16) were extracted and tabulated. Second, the study results related to patient participation were extracted. Third, the extracts were compared and grouped based on their similarities and differences. Similar extracts were coded into subcategories that were inductively named. In the analysis process, emerging findings and interpretations were continuously compared with previous findings to generalize and refine the concepts. Fourth, the subcategories were grouped into main categories with higher levels of

abstraction. The analysis was conducted by three collaborating researchers until a consensus of the analytical structure was reached.

4.2 Empirical research

Empirical research included a retrospective document analysis of patients' nursing documents (Phase II) and an interview study with patients and registered nurses (Phase III) in a forensic psychiatric inpatient setting. A forensic psychiatric setting was purposively chosen due to the lack of knowledge on PRN treatment therewithin. The selected study hospital was suitable because it provides long-term forensic psychiatric services in several units with various secure levels.

4.2.1 Research setting

Empirical research (Phases II and III) was carried out in one of the two state-run hospitals in Finland providing high-quality specialized forensic psychiatric services and mental examinations (Kuusmanen et al., 2013). In 2019, the interdisciplinary staff of the hospital comprised 547 full-time equivalent posts, including physicians (n=19.5), head nurses (n=28), registered nurses (n=182), practical nurses (n=139), ward domestics (n=50), psychologists (n=14), occupational therapists (n=14), social workers (n=6), and other employees (n=94.5). With 284 beds for adults and 12 beds for underaged patients the hospital is responsible for two-thirds of Finnish forensic patients. The hospital admits three groups of patients, all involuntary admitted (Mental Health Act 1116/1990): a) forensic patients, meaning those who have committed an offense, but their sentence has been waived because they lack criminal responsibility due to mental illness (46% in October 2019), b) patients whose treatment in municipal hospitals is considered too dangerous or difficult (44%), and c) patients undergoing a court-ordered mental state examination to assess their responsibility in a committed offense, and their need of treatment (10%). (Niuvanniemi Hospital, 2019.)

At the time of this study, more than 80% of the hospital patients had been diagnosed with schizophrenia. In addition, substance misuse problems were prevalent. (Kuivalainen et al., 2017, Niuvanniemi Hospital, 2019.) Patients had serious impairments in functioning and deficiencies in managing aggressive behavior, which particularly needed to be taken into account in their care. Because of the severity of patients' illnesses, their treatment usually required several years; at the end of 2020, the average length of forensic patients' admission was seven and half years, and dangerous- or difficult-to-treat patients' average admission length was five and half years (Niuvanniemi Hospital, 2021a). As guided by the Mental Health Act (1116/1990), patients' treatment was carried out in mutual understanding

as far as possible. Further, the hospital followed a patient-oriented care philosophy, meaning that the hospital promoted patients' participation in the planning, assessing, and decision-making of their treatment (Niuvanniemi Hospital, 2021b).

Physicians were responsible for patients' pharmacological care. Registered nurses administered medication to patients based on physicians' orders. This meant that they assessed the need for medication prescribed to be used as necessary. Noteworthy, while most PRNs are typically over-the-counter drugs, in the study hospital each and every medication needed to be prescribed by a physician before it could be administered to a patient.

4.2.2 Document analysis

Recruitment and sample

For the document analysis (Phase II), convenience sampling was chosen in line with the research permit from the hospital that required informed consent from the participants to review their nursing documents. Patients were informed about the study in meetings in the units and via study leaflets (Figure 4). The recruitment focused on adult patients who had been in a hospital more than one year (N=224). In total, 79 patients provided informed consent and 67 were included based on the following criteria: i) capable of giving informed consent according to a medical assessment and ii) length of current admission more than one year.

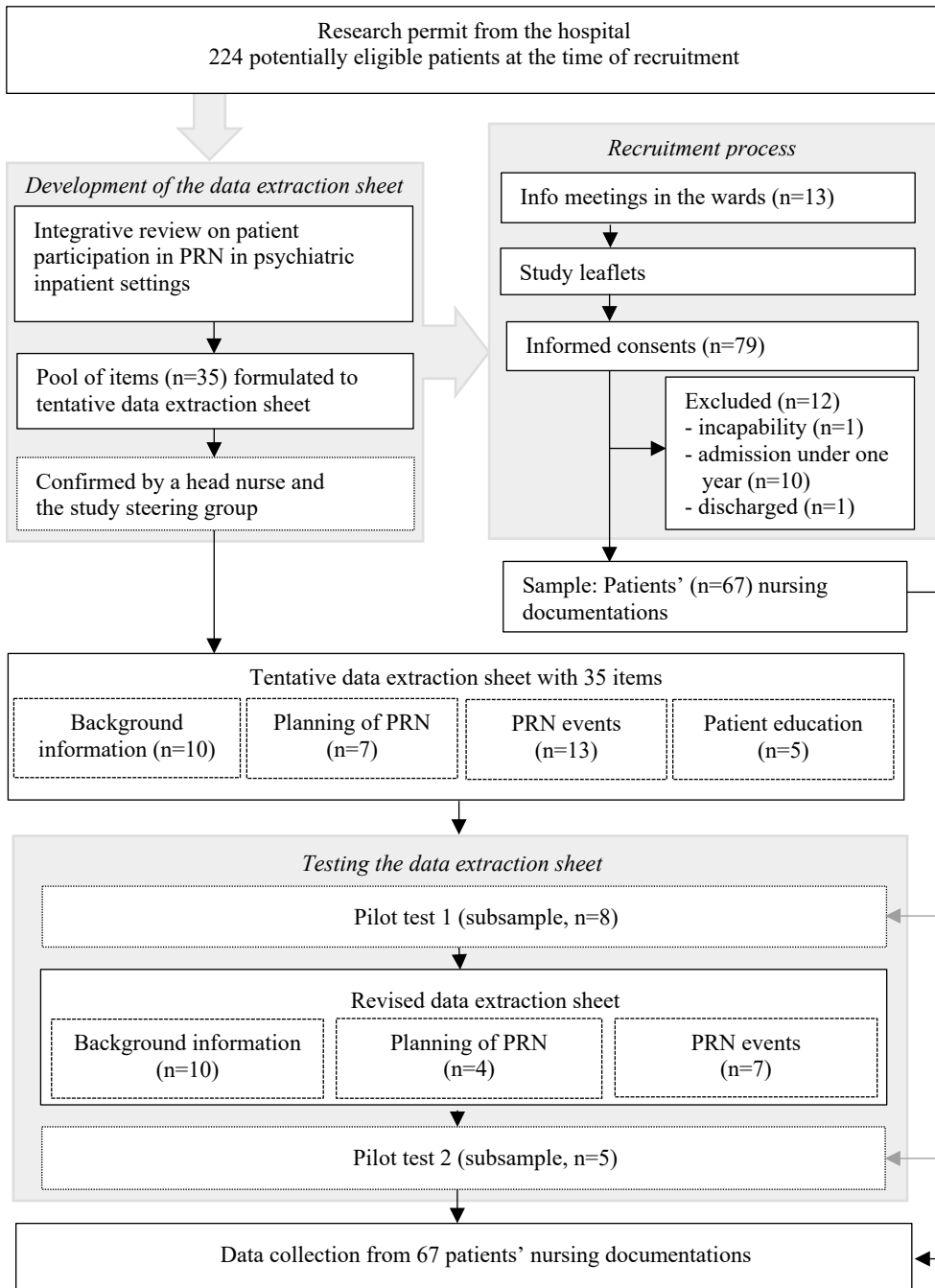


Figure 4. Development of data extraction sheet and recruitment process for analysis of patients' nursing documentation.

Data collection

A data extraction sheet for collecting the data for patient participation in PRN was developed for the study through a process that included four steps (Figure 4). First, a pool of items was composed from the integrative review (Phase I) and other literature. Second, the content of a tentative data extraction sheet was confirmed by a head nurse and the study steering group. Third, its suitability was tested with a subsample of eight patients' documents. Based on the first pilot, a tentative data extraction sheet was adopted to the research environment; variables that did not produce comparable data and information that was not collectable from patient records were removed. For example, documentation of patients' involvement in decision-making on the prescribing of PRN or patient education was occasional and fragmented. In the final step, the revised sheet was confirmed with a second pilot round (n=5) and found relevant. The final data extraction sheet (Appendix 2) included items on patient characteristics (n=10), planning of PRN (n=4) and PRN events (n=7).

The researcher collected the data from the electronic patient information system from April to June in 2018. Patients' background information included demographic and clinical characteristics. In relation to the planning of PRN, prescriptions of both scheduled and PRN medications were reviewed from medication charts. In addition, data were collected from a specific part of patients' treatment plans, namely the crisis plan, which included patients' own views on suitable methods for them in acute psychiatric situations. To identify all the events in which PRN was discussed, administered or both, the daily nursing notes from 67 patients' records were reviewed for a one-year period. PRN was defined as medication that patients used on as-needed and voluntary bases. All PRNs except non-pharmacological throat lozenges, creams and lotions and nicotine products were reviewed. Items of PRN events included time, type and reason of the event, route of medication, non-pharmacological methods proposed or used, their initiator and feedback on the event.

Data analysis

For the document analysis, the data were first inputted into an Excel spreadsheet (Microsoft Office, WA, USA). Textual data were coded into categories for statistical analysis. Non-pharmacological methods from patients' crisis plans were extracted as such. PRN event types were extracted into nine different categories that were identified during data collection. Time of PRN event was extracted as such and later grouped into four shifts. Reason for PRN was extracted into ten, and route of medication into eight categories. Non-pharmacological strategies reported in PRN events were comprised of five, and their initiators seven categories. Feedback,

including the efficacy of PRN events, possible side effects, and the viewpoint of the documented feedback, was extracted into six categories.

Statistical analysis was performed using SPSS version 24 (IBM Corp, NY, USA). Descriptive statistical methods were used to depict patients' background information and PRN events. In the statistical analysis, non-parametric tests were chosen due to not normally distributed continuous variables. Crosstabulation with Pearson's chi-square test or Fisher's exact test was used to determine associations between discrete variables and Spearman's correlation (r_s) between continuous variables. The Mann-Whitney U test and the Kruskal-Wallis test were used to compare differences between groups. A p-value of 0.05 was indicated as a cutoff for statistical significance.

4.2.3 Interview study

Recruitment and sample

For the interview study (Phase III), a purposive sampling was chosen to reach informants who had personal experiences with PRN medication treatment and were willing to share their thoughts and participate in research (DiCicco-Bloom & Crabtree, 2006).

The patients were recruited at the meetings, which were organized in all 13 adult wards at the hospital. The researcher informed the patients about the study, and they had an opportunity to discuss with the researcher. The voluntary participants had an opportunity to enroll in the meetings via the researcher or afterwards via head nurses. A total of 37 patients enrolled, but two were excluded based on physicians' assessment of lacked capacity, and one patient withdrew before the interview. Thus, 34 patients were interviewed.

The health care staff was recruited from three channels. First, the researcher contacted a secretary from the hospital who conveyed an electronic information letter through the hospital's intranet system. Second, a head nurse promoted the study in a head nurses' meeting for recruiting participants. Two registered nurses enrolled in the study in advance via the hospital secretary. Third, the staff members were invited to participate in the research during unit meetings for patients, and 26 nurses enrolled the study. From the 28 nurses who enrolled, 19 participated in the interview. The reasons for withdrawal were that two did not have day shifts during the data collection, one withdrew without reporting the reason, and six were unable to participate in the interview arranged, mostly due to an acute situation on the ward. In addition, one physician enrolled in the study but was excluded by the researcher due to the absence of other physicians.

Data collection

The data were collected using semi-structured interviews in November-December 2019. The interview guide (Table 2) was developed based on previous literature and empirical knowledge gained from earlier study phases (Kallio et al., 2016). Its suitability was evaluated after the first patient and first staff interview. No changes were needed, and the first interviews were included in the data.

Staff interviews were scheduled based on nurses' work shifts. One pair and five group interviews with three to four participants were conducted. The groups were deliberately formed to include nurses from different units to avoid disturbing the work in the units as well as enable discourse on possible variation in PRN treatment between the units. The duration of staff interviews ranged from 57 to 80 minutes (mean 70 minutes) and was seven hours and four minutes in total.

Patients were individually interviewed in quiet rooms on their wards. The hospital security protocol required the presence of a non-participating staff member. Patient interviews lasted 9–39 minutes (mean 20 minutes) and totaled 12.5 hours.

Table 2. Contents of the interview guide.

PATIENTS	NURSES
Knowledge and planning of PRN medication	
How have you been involved when your as-needed medication has been planned?	How are patients involved in the planning of medication?
Do you think that you know enough about your medication, and how have you gained this information?	Do you think that patients know enough about PRN medication? What kind of information are patients provided?
In what kinds of situations and with whom do you discuss as-needed medication?	How is the patients' PRN medication planned and assessed?
PRN events in the unit	
In what kind of situations do you feel that you need as-needed medication?	How is the need for PRN evaluated?
How do you think the staff knows that you need medication? Have you ever disagreed?	How well do patients and staff agree on the need for medication?
In your opinion, who decides the use of as-needed medication?	How is the decision of administration made?
Describe one situation in which you have used as-needed medication.	In what kinds of situations is medication offered to patients, and why do patients request PRN?
Promoting patient participation	
We have discussed how you have participated in planning and decision-making of as-needed medication. In your opinion, how could these things be changed to be better?	How could patient participation in PRN treatment be promoted?

Data analysis

The data from patients' and nurses' interviews were analyzed with an inductive content analysis method that is suitable for capturing people's individual opinions and lived experiences (Elo & Kyngäs, 2008). The audio-recorded data were transcribed verbatim (412 pages) by the researcher. The analysis started with a thorough read to get an understanding of the entire data. Then, the data were entered into the software NVivo 12 (QSR, 2018). Analysis was started with identifying meaning units related to the research questions from patient interviews. The meaning units were grouped based on their similarity into subcategories that were inductively named based on their content. The analysis was continued to higher levels of abstraction by assembling subcategories to form and label the categories. Two

researchers discussed the model until a consensus of subcategories and categories was reached. The compounded model was then used to analyze staff interviews. New subcategories from staff interviews were allowed but not needed as the data fit into the categories formed from the patient data. The inductive content analysis of the data constituted 16 subcategories under five main categories.

4.3 Ethical considerations

The ethical considerations of this study focused on the researcher's contribution, research topic, target group and the research ethical principles of respecting participants' autonomy, avoiding harm and ensuring participants' privacy (TENK, 2019). This study was reviewed and approved by the Committee on Research Ethics of the University of Eastern Finland and the Niuvanniemi Hospital Board.

Good scientific practice and an ethically sustainable manner were followed throughout the study (All European Academies, 2017; TENK, 2019; WMA, 2013). The researcher planned the study, collected and analyzed the data in all study phases, and was responsible for papers reporting the findings. During the data collection, the researcher could use her professional mental health competence to observe patient participants and to reduce their psychological strain (Biddle et al. 2013). The research publications were written in a way that respected the participants, ascertaining appropriate arguments and equality between different points of view.

The ethical justification of the research topic was underpinned by the paucity of previous literature and its relevance to nursing practice (Lund et al., 2021). By producing new knowledge about patient participation in PRN treatment, the study responses show an interest in PRN practices and promotes development of people-centered and empowering care. Because the study produced knowledge that can be used to develop psychiatric and forensic psychiatric care, the study has advantages for patients and professionals in mental health field (Vohora et al., 2018).

One target group in this study included patients involuntarily admitted to forensic psychiatric care. Forensic patients have been considered especially vulnerable because they are admitted in coercive institutional contexts and because of the severity of their mental illnesses (European Commission, 2018; Medical Research Act 488/1999; Munthe et al., 2010). *Vulnerability* refers to a participant having increased probability of being harmed due to their incapability of protecting their own interests (Nijhawan et al. 2013, Bracken-Roche et al. 2017, González-Duarte et al. 2019). Involving patients in this research was supported by the study's low risk of harm and strain. Patients were recruited as sources of information; it is essential to hear the voices of patients themselves when investigating patient participation (Newman et al., 2017). Treatment admissions in the study hospital were for several years. Thus, the patients had significant experience of the research topic. Participants were treated

with respect and dignity throughout the research process (TENK, 2019). Participants' position as experts of the study topic was highlighted during the recruitment and data collection. Patients' trust in themselves as experts was promoted by using terms familiar to them and starting the interview with a concrete question related to their experiences. Noteworthy, involving mental health patients in research discloses their opinions in a society that tends to seldomly notice their views. For an individual patient, participating in the study was optimally an empowering experience that helped the patient build self-worth (Biddle et al., 2013).

Participants' autonomy was respected in this study as informed consent was obtained both for document analysis and the interviews with patients and nurses. In the document analysis, patients' informed consent was related to permission for the researcher to collect the data from nursing documentation. Information about the study was provided both orally and in writing. Based on an assessment of function (Global Assessment of Functioning, GAF) used with patients in the study hospital, they had severe impairment in functioning. To ensure that patients understood the meaning and process of the research and their role in it (Nijhawan et al. 2013), the language in the study leaflets and consent forms for patients were clarified (Newman et al., 2017). Physicians were consulted to evaluate the capacity of patients enrolled because forensic psychiatric patients may have challenges in giving informed consent (González-Duarte et al. 2019; Munthe et al., 2010).

Forensic psychiatric patients' freedom has been strictly limited, and this may have influenced their experienced freedom of decision. They may have thought that declining would have negative consequences. Similarly, they may have had unrealistic expectations that participating in research would help them, for example, be discharged from the hospital (Munthe et al. 2010). Patients were made aware that participation was completely voluntary, and that it would not affect their treatment in the hospital. In addition, no incentives were given to participants and they had the possibility to withdraw from the study. Participants' informed consent was confirmed with a signed form that included information about the audio-recording of the interviews.

To avoid harm when discussing sensitive issues with vulnerable participants, patients interviewed were informed of potential distress, their well-being was monitored, and they were encouraged to disclose any troubling feelings (Biddle et al. 2013). Participants may have found the research topic sensitive (Munthe et al., 2010). Unnecessary psychological strain was prevented by testing the length of the interview in advance. In the interviews, the researcher aimed to create a safe and supporting atmosphere and environment to promote trust and enable participants to tell about their experiences and thoughts freely (Newman et al., 2017). To ensure researchers' safety, a staff member (nurse from the unit or hospital pharmacist) was present in the room but not participating the discussion. Still, the researcher aimed

to express trust towards the participant and avoided demonstrating that participant might be considered dangerous (Newman et al., 2017). The interview guide was planned so that interviewees were able to regulate the content and depth of the information they provided for all the questions. The researcher and the staff member reserved the opportunity to discontinue the interview if they noticed a participant experiencing excessive physical or psychological stress (Newman et al., 2017), but this was not needed.

Participants were informed that only the researcher would handle the raw data gathered from nursing documents and the interview. To ensure participants' privacy, the principles of the data protection regulation were followed (Personal Data Act 523/1999; European Union's General Data Protection Regulation 679/2016). Only the personal data that was necessary for the study purpose was gathered, and participants' identities were protected in data handling and maintained anonymity and privacy. The research data were collected to be used only for this study, and it will be saved on a USB flash drive in a locked closet at the university for ten years after the research. Patients' informed consent forms were not handled outside the hospital area, and they were stored in the hospital office.

5 Results

This chapter reports findings according to the study phases. First, the results from the integrative review (Paper I) describe the previous knowledge on patient participation in PRN in psychiatric inpatient settings. Then, patient participation in PRN in forensic psychiatric care is presented based on nursing documentation (Papers II and III) and the interviews with patients and registered nurses (Paper IV).

5.1 Previous knowledge on patient participation in PRN in psychiatric inpatient care

The integrative review (Paper I) was conducted to explore what patient participation in PRN is and how it is achieved in psychiatric inpatient care. Half of the studies included (n=16) were qualitative interview studies and the other half had used quantitative methods. Most of the data had been collected from professionals (n=7), followed by data from patient records (n=4). The rest of the data were from patients (n=2) or both patients and professionals (n=3). The majority (n=14) of the studies were conducted in the UK.

Based on the data analysis, patient participation in PRN concerned: i) patient-related starting points that enable their participation, ii) the reasons for PRN and iii) the roles and actions of professionals. Noteworthy, included studies mainly focused on psychotropic PRN, and only one study reported PRN used for physical health reasons (Goedhard et al., 2007).

What is patient participation in PRN?

Previous studies link patient participation in PRN in psychiatric inpatient care to patient-related features and circumstances in several different ways. Patients' motivation to participate (Baker et al., 2006; Duxbury et al., 2010a) and adequate knowledge of medication (Baker et al., 2007a, Cleary et al., 2012; Duxbury et al., 2010a) have been found to be crucial prerequisites for patient participation. Patient participation depended on patients' perceptions of the need for PRN being noticed. This meant that patients would have the option to request PRN when experiencing acute symptoms (Cleary et al., 2012; Richardson et al., 2015; Stewart et al., 2012;

Usher et al., 2009) and to either accept or refuse PRN offered by staff (Baker et al., 2006; Price & Baker, 2013; Whittington et al., 2009).

Decision-making in PRN included assessing the need for medication. In previous studies, patient participation has been connected to patients' views on the reasons to request medication (Cleary et al., 2012; Goedhard et al., 2007) and mental health professionals' decisions influenced by patient preferences (Baker et al., 2007a; Usher et al., 2009).

Previous knowledge denotes that patient participation is linked to professionals' roles and actions. This included respectful interaction between patient and professionals (Baker et al., 2007b; Duxbury et al., 2010a) and professionals providing information on PRN (Baker et al., 2007a; Cleary et al., 2012; Duxbury et al., 2010a) and proposing alternative methods for dealing with acute symptoms (Baker et al., 2006; Cleary et al., 2012; Curtis et al., 2007; Usher et al., 2009). Previous studies have also reported the use of coercion instead of promoting patient participation (Baker et al., 2006; Cleary et al., 2012; Richardsson et al., 2015; Stewart et al., 2012).

Achievement of patient participation in PRN

In psychiatric inpatient care, patients have reported having a lack of motivation to take responsibility for their care (Baker et al., 2006; Duxbury et al., 2010a). Their willingness to participate has been connected to their opinions on relevance and utility of PRN (Baker et al., 2006; Baker et al., 2011; Cleary et al., 2012). Patients' opportunities to participate have also decreased due to insufficient knowledge on medication (Baker et al., 2006; Baker et al., 2007a; Cleary et al., 2012; Duxbury et al., 2010a).

Mental health experts have stated that patients' views should be sorted including their PRN preferences (Baker et al., 2007b). However, only one study (Baker et al., 2007a) reported patient participation in planning of PRN. In this study, mental health professionals noted that PRN can be routinely prescribed without disclosing patients' preferences. In addition, two studies focused on how increasing accountability of nurses in prescribing would affect PRN practices (Baker, 2011; Price & Baker, 2013). In both studies, mental health professionals were concerned that patients could be demanding towards the nurses if they had the role of prescribing.

Studies have mostly reported findings on PRN administration. Patients have valued having the choice to initiate PRN (Baker et al., 2006). However, the initiator of PRN administrations has rarely been reported in previous studies. The patient requests that have been reported have been rare (Curtis et al., 2007; Richardson et al., 2015) and often denied (Baker et al., 2006; Duxbury et al., 2010b). Studies have implied limited opportunities for patients to refuse staff-initiated PRN (Baker et al.,

2006; Cleary et al., 2012; Duxbury et al., 2010b). Instead, the power and control in PRN administration have been held by professionals (Baker et al., 2006; Duxbury et al., 2010a). Disagreements between patients and staff about the need for PRN have sometimes led to conflicts (Richardson et al., 2015).

Patients have used PRN to relieve acute symptoms (e.g., Baker et al., 2008b; Goedhard et al., 2007; Stewart et al., 2012). However, studies have reported that patients have sought PRN without medical indication at times, especially in cases involving substance misuse problems (Baker et al., 2007a; Usher et al., 2009). It has also been suggested that PRN can be used by professionals for such purposes as controlling the unit (Baker et al., 2006; Price & Baker, 2013; Usher et al., 2009).

Based on previous knowledge, professionals have a crucial role in patient participation. Studies have reported that patients and professionals discuss PRN administration (Usher et al., 2009) and professionals' interaction has been warm and emphatic (Duxbury et al., 2010b). A widely recognized challenge for patient participation has been the lack of patient counselling (Baker et al., 2007a, 2008b; Cleary et al., 2012; Duxbury et al., 2010a, 2010b). Evidence of insufficient use of non-pharmacological alternatives to PRN has also been found (Baker et al., 2006, 2007a; Cleary et al., 2012; Curtis et al., 2007; Usher et al., 2009).

5.2 Patient participation in PRN in forensic psychiatric inpatient care based on nursing documentation

The nursing documentation of forensic psychiatric patients ($n=67$) was reviewed to explore how PRN is used in forensic psychiatric care (Paper II) and how patient participation is documented in PRN care (Paper III).

Patients whose documents were reviewed were, on average, 43 years old and mostly male (87%). Two-thirds were forensic patients and one-third had a status of dangerous- or difficult-to-treat. The length of patients' admission ranged from one to 29 years. Patients were mostly diagnosed within the schizophrenia spectrum (96%) and the majority (70%) also with substance use disorder. Patients' Global Assessment of Functioning (GAF) values were 3–31 ($Mdn=16$) out of a possible 100, which indicated severe psychiatric symptoms and inabilities in functioning. Their Violence Risk Screening (V-RISK-10) values of 7–20 ($Mdn=16$) out of a possible 20 denoted a high risk of violence. All patients in the sample had regular medication prescribed for psychiatric indications and a majority (93%) also for physical reasons.

In a one-year-period, PRN was either considered, administered or both in a total of 8,363 occasions. All but one patient had experienced PRN administration. The median number of PRN events per patient was 52. The prevalence of PRN events had a wide fluctuation with a maximum of 726 events per patient (range 0–726,

$M=129$, $SD=175.096$). While most of the patients used PRN occasionally, a quarter of patients used PRN most days in the study period.

PRN events were most common in the evening (40%) and rarest at night (8%). While PRN events for physical reasons occurred throughout the day, PRN for psychiatric reasons was mostly used in the afternoon (56%), and PRN for insomnia in the evening (88%).

Purpose of PRN

All the patients were prescribed PRN with a median of four orders per patient. The most common indications in the prescriptions were pain (88% of patients), constipation (45%), fever or flu (36%), psychotic disorder (33%), insomnia (33%) and anxiety (28%). Drugs prescribed for ten or more patients were paracetamol ($n=48$), ibuprofen ($n=28$), macrogol ($n=28$), quetiapine ($n=23$), melatonin ($n=14$), and olanzapine ($n=13$). Noteworthily, benzodiazepines were charted for only three patients.

Virtually all patients (66/67) had PRN orders for physical symptoms. PRN was prescribed for two-thirds of patients for psychiatric reasons or insomnia. PRN orders for psychiatric indications were more common among patients with lower GAF values ($r_s=-0.244$, $p=0.047$).

Over the one-year period reviewed, a total of 8,626 documented PRN events were related to physical reasons (60%), psychiatric symptoms (26%) and insomnia (14%). The majority of patients (96%) had used PRN at least once for pain. Other typical reasons included fever or flu (73% of patients), psychiatric symptoms (54%), bowel disfunctions (39%), insomnia (37%) and heartburn (25%).

The prevalence of the use of PRN for physical symptoms was not statistically significantly associated with any patient characteristics. However, it had a positive correlation with the prevalence of psychiatric reasons or insomnia denoting that patients with prevalent PRN use for physical reasons also used medication frequently for psychiatric reasons and sleeping problems.

Lower GAF values explained the increased use of PRN for psychiatric reasons ($r_s=-0.432$, $p<0.001$) and insomnia ($r_s=-0.350$, $p=0.004$). In addition, female patients used PRN for psychiatric reasons ($Z=-3.121$, $p=0.002$) and insomnia ($Z=-2.521$, $p=0.012$) statistically significantly more than male patients. Also, the patients' status was statistically significantly associated with the use of such medication; dangerous-or difficult-to-treat patients had more PRN events for psychiatric reasons ($Z=-2.973$, $p=0.003$) and insomnia ($Z=-2.322$, $p=0.020$) than forensic patients.

In patients' crisis plans, 57% of patients had mentioned medication useful for acute crises, but these patients had statistically significantly fewer PRN prescriptions

($Z=3.382, p=0.001$) and PRN events ($Z=2.123, p=0.001$) for psychiatric reasons than the patients who did not have suggested medication in their plans.

Non-pharmacological alternatives to PRN

Non-pharmacological alternatives are reported as planned strategies from patients' crisis plans and interventions suggested or used in PRN events based on nursing documentation. In the crisis plans, patients had identified various strategies that they found useful for acute psychiatric crises (Figure 5). Most preferred were discussion with staff, music, resting and physical activities. Patients also found that having their own space and going outdoors to be helpful in times of distress. They had also mentioned several activities and cognitive-behavioral coping strategies for anxiety.



Figure 5. Non-pharmacological methods in patients' plans for psychiatric crisis (font size illustrates the number of plans in which the method was mentioned).

Use of various interventions has also been documented in PRN events for psychiatric reasons. Patients' symptoms were alleviated with both conversational methods (39%) and diverse activities (38%). However, whilst all the patients had strategies mentioned in their crisis plans, the use of alternative interventions was documented only in a minority of PRN events for psychiatric reasons or insomnia (Table 3). In addition to non-pharmacological interventions, preponing scheduled medication was reported in nursing documentation as an alternative to PRN.

Table 3. Alternatives mentioned in plans for acute psychiatric crisis and methods documented in PRN events for psychiatric symptoms or insomnia.

Alternative	Mentioned in crisis plan number of patients	Documented in PRN events number of patients (number of events)
Activity		
Meaningful doing	43	7 (18)
Music	40	5 (9)
Sports and being outdoors	34	6 (44)
Stretching or massage	8	6 (18)
Social methods		
Discussion and patient education	52	22 (163)
Social contacts	9	1 (2)
Presence, being near	4	1 (3)
Meeting physician	0	2 (2)
Withdrawal		
Resting and sleeping	27	13 (45)
Own space and distance	23	0
Behavioral strategies		
Anxiety coping exercises	26	7 (29)
Smoking	11	4 (5)
Praying	0	2 (2)
Breathing into paper bag	0	1 (1)
Undressing environment	2	1 (2)
Daily living activities		
Eating	5	6 (13)
Drinking (mostly sour milk)	2	5 (37)
Shower or sauna	2	2 (2)
Restrictive methods		
One-to-one observation	0	3 (12)
Seclusion	0	3 (5)
Mechanical restraint	0	2 (2)
Restriction with clothes	0	1 (2)
Manual restraint	0	1 (2)
Ward transfer	0	1 (1)

Alternative methods documented in the PRN events for physical reasons were mostly activities (71%), for example massage, stretching, sauna and eating.

Overall, in PRN events, the use of non-pharmacological alternatives was rare, as they were reported only in 6% (n=506) of the 8,626 events. They were more commonly suggested and used when PRN was related to psychiatric reasons (15%) than in events for physical reasons (3%) or insomnia (3%). However, the alternative method was often documented in the occasions when patient refused PRN (56%) or when staff denied a patient's PRN request (43%).

Documentation of who initiated non-pharmacological alternatives in PRN events was found in 41% of the cases. Usually, alternatives were suggested by a nurse (76%) and they mostly included activities (48%), such as sports, listening to music, showering with cold or hot water, handicrafts or taking part in the hospital's activity groups. The second most commonly documented alternatives were conversational methods (30%). Based on nursing documentation, patients most commonly initiated activities (58%), followed by rest or sleeping (20%). Patient-initiative conversation was documented only in one event; this proposal was denied. Patients also rejected most of the nurses' conversation suggestions (66%).

Initiators and decisions in PRN events

Based on documentation, half of all the PRN events were patient-initiated (52%) and the other half were initiated by staff (48%). Patient-initiated events were more common in PRN events for psychiatric reasons (59%) and insomnia (55%) than they were for physical reasons (43%). Younger patients tended to have more patient-initiated events ($r_s=-0.296$, $p=0.015$).

Most of the patients (94%) had requested PRN at least once during the one-year period and they usually received the requested PRN or sometimes another drug. In 3% of the cases, the request was denied, and these events occurred with 36% of the patients. Patient-initiated events also included occasions in which there was discrepancy in a patient's expression; the patient first requested PRN but then refused to take it. Sometimes patients only declared their intentions for the future; they either planned to seek PRN later or discontinue the use of PRN.

Most patients' (96%) documentation also included staff-initiated PRN events. Ten patients had experienced an event in which they were persuaded to take PRN. Patients had refused only 1% of PRN offered. Refusals were documented for 30% of the patients. Staff had also initiated PRN events by encouraging patients to seek medication later.

Feedback on PRN

Feedback was reported in 17% of the PRN events. Reporting was mostly (71%) documented from the viewpoint of nurses.

In the events in which PRN was administered, nurses found medication effective in 80% of the cases. Patients had found PRN helpful in half (49%) of the cases, and in the other half (51%) they had reported medication ineffective. Side-effects were documented in five PRN events.

Relief of symptoms was also most commonly reported in connection to the events in which a patient's request for PRN was denied; patients' feedback was positive in 67% and nurses' in 80% of such events. In contrast, the outcome of a patient's PRN refusal was documented as negative in 80% of the cases, all from the viewpoint of nurses.

5.3 Patients' and nurses' perceptions on patient participation in PRN in forensic psychiatric inpatient care

To gain insight on how the stakeholders in PRN perceived patient participation in PRN in forensic psychiatric inpatient care, patients ($n=34$) and registered nurses ($n=19$) were interviewed (Paper IV). Based on self-reported background information (Table 4), the length of patients' admission ranged from five months to almost 30 years ($M=7$), and the nurses had worked in the hospital from one year and five months to 24 years ($M=10$). Most of the patients were male (85%) and most nurses female (84%).

Table 4. Self-reported background information of the participants.

	Number	Mean (range) in years
PATIENTS (n=34)		
Age		40 (22–64)
Gender		
Female	5	
Male	29	
Length of current admission		6.8 (0.4–29.9)
Primary diagnosis for current admission		
Schizophrenia	23	
Schizoaffective disorder	6	
Delusional disorder	3	
Other	2	
Years since getting the primary diagnosis		13 (1–47)
Other chronic illnesses		
Physical	16	
Psychiatric	10	
None	10	
Substance misuse history		
Yes	26	
No	8	
NURSES (n=19)		
Age		41 (24–60)
Gender		
Female	16	
Male	3	
Professional title		
Registered nurse	16	
Assistant head nurse	3	
Work experience in the study hospital		10.3 (1.4–24)
Work experience in social and health care		13.8 (1.6–40)

The participants connected patient participation in PRN with i) individual needs and health as a basis for PRN, ii) use of PRN as a private decision in the social context of the ward, iii) PRN as an integrated part of daily care, iv) PRN planning with the involved stakeholders and v) multiform PRN administration.

Participants discussed that PRN was based on patients' individual needs and health. They found that forensic patients comprise a special group when it comes to patient participation in PRN due to the severity of patients' mental illnesses. Patients' preferences on PRN were also associated with their individual pasts and attitudes towards PRN. These attitudes could be discordant with professionals' opinions on the need for PRN. Thus, the nurses tried to encourage drug-avoidant patients to use PRN and to inhibit drug-seeking patients' PRN use. Participants also described PRN use as reflecting patients' health. Patients perceived it as an indicator of poor health, but from the point of view of nurses, it also demonstrated a patient's capability to recognize and treat symptoms. A patient's health was also seen to affect their ability to participate in PRN decisions.

Participants' descriptions of PRN use reflected how private decisions were made in the social context. Participants perceived that PRN use was voluntary, but in

practice, the voluntariness could be ostensible when patients felt that accepting PRN was their only option. PRN had a social dimension in relation to the public space of the ward. Patients observed their peers' PRN use but tried to protect their own privacy. Patients' PRN use was described to be bounded up with ward routines. For example, they found waiting for PRN frustrating and avoided seeking PRN during night shifts when double-checks of medication took longer. This could result in patients requesting PRN for insomnia in advance, before trying to sleep without medication. They might also hesitate to request PRN if nurses seemed busy or the nurse in charge of medication was assumed disapproving. In addition, patients had to accommodate their needs to the hospital policy of avoiding benzodiazepines and, according to nurses, this caused most of the conflicts in PRN.

Integrating PRN as part of daily care was reflected in participants' perceptions on different purposes of PRN, its experienced effectiveness and alternatives for medication. Participants indicated that PRN was mostly administered at the request of patients. Patients justified their PRN use with a physical or psychiatric symptom, but nurses pointed out that patients also sought PRN without real reason or out of habit. For the staff, PRN could be used to save time. In addition to pharmacodynamics, PRN was suggested to be effective due to patients' trust in medication and the interaction with the staff during the administration. From the viewpoint of patients, PRN was found effective for physical symptoms, but it could fail to relieve their psychiatric symptoms. However, they kept on seeking help from ineffective PRN. Patients preferred non-pharmacological methods, but sometimes their first choice was PRN because it was the easiest solution. Nurses had experienced that patients were unwilling to try alternatives for medication. They also acknowledged that suggesting alternatives was insufficient and related to both patient characteristics and the situation.

The participants expressed that the planning of PRN involved three stakeholders. Participants found adequate knowledge of medication to be a prerequisite for patient participation, but patient counselling was unsystematic, and patients gained information themselves. Patients wished to be included in the planning, but some patients adopted an outsider's role if not invited to cooperate. Others were active claimants of participation and resorted to conflict behavior if their voice was not heard in the decision-making. The role of nurses was illustrated as a two-way messenger who informed physicians about patients' PRN needs and explained physicians' decisions to patients. Physicians were seen as gatekeepers who either invited patients to participate or preferred unilateral decision-making. This resulted in unequal possibilities for patients to participate. In addition, patients found that to be involved required both courage and a reputation of reliable and obedient.

Participants illustrated that PRN administrations were multiform in relation to how well patients' and nurses' views on the need for medication alligned. First, in

harmonized PRN occasions, the interaction was described as respectful, and both agreed on the need for PRN. Second, participants illustrated that PRN administrations were often mechanical with limited interaction. Patients could act mechanically when accepting PRN without considering or expressing their own opinion. In addition, nurses gave PRN at the request of patients whether or not they agreed on the need for it. Interaction in such situations was limited, mainly to avoid feelings of mistrust. Also, participants conceived that patients have the right to receive their PRN, even if nurses doubted their reason. Third, participants depicted tense PRN occasions in which patients were provoked by their PRN request being denied by a nurse. Tense situations could also result when patients found nurses' PRN offers imposing.

5.4 Summary of the main results

Based on the integrative review, previous studies in relation to patient participation in PRN in psychiatric inpatient care have most commonly been based on data collected by interviewing health care professionals or from medical records. These studies focused on the administration of psychotropic PRN. Based on previous knowledge, patient participation in PRN requires patients to have motivation and capability. Participation occurs in shared decision-making related to PRN administration and equal partnership between patients and mental health professionals. The literature indicates variation and challenges in achievement of patient participation in PRN, such as lack of patients' motivation and knowledge, power imbalances between patients and professionals, and professionals offering PRN for their own purposes. Previous literature has focused on PRN administration and the knowledge on patient participation in planning and evaluating PRN is lacking.

Based on nursing documentation, PRN was frequently used in the forensic psychiatric hospital for physical and psychiatric indications. It had a more pertinent role in small groups of patients. While patients had named various non-pharmacological methods in their plans for psychiatric crisis, they were rarely documented as being used in PRN events for psychiatric reasons. Alternatives were even more rare when the reason for PRN was physical. Based on documentation, both patients and nurses initiate PRN, and it was mostly administered in agreement. However, nine different types of PRN events demonstrated the complexity of decision-making related to PRN. Feedback on PRN was mostly documented from the viewpoint of nurses and they had mostly found PRN effective. When patients feedback was documented, they had experienced PRN helpful in half of the cases. Nursing documentation provided limited evidence on how patients participated in planning and evaluating PRN.

According to patients and nurses, patient participation in PRN has special features in forensic psychiatric inpatient care. PRN is an important method for alleviate patients' symptoms. However, in hospital environment patients had to accommodate their individual preferences and medication needs to ward routines and social contexts. Patients' possibilities to participate in the planning of PRN was disorganized and dependent on patients' motivation and courage as well as physicians' individual practices. Also, the need for systematic patient education on medication issues was noticed. In PRN events, patients had an active role as initiators, and they usually received PRN that they requested whether or not nurses agreed on the need for medication. Disputing patients' need for medication could lead to conflicts. Patients wanted to decide for themselves when to use PRN. However, when patients had severe acute psychiatric symptoms, the voluntariness of PRN could be ostensible.

The summary of the main results associated with the PRN process is illustrated in Figure 6.

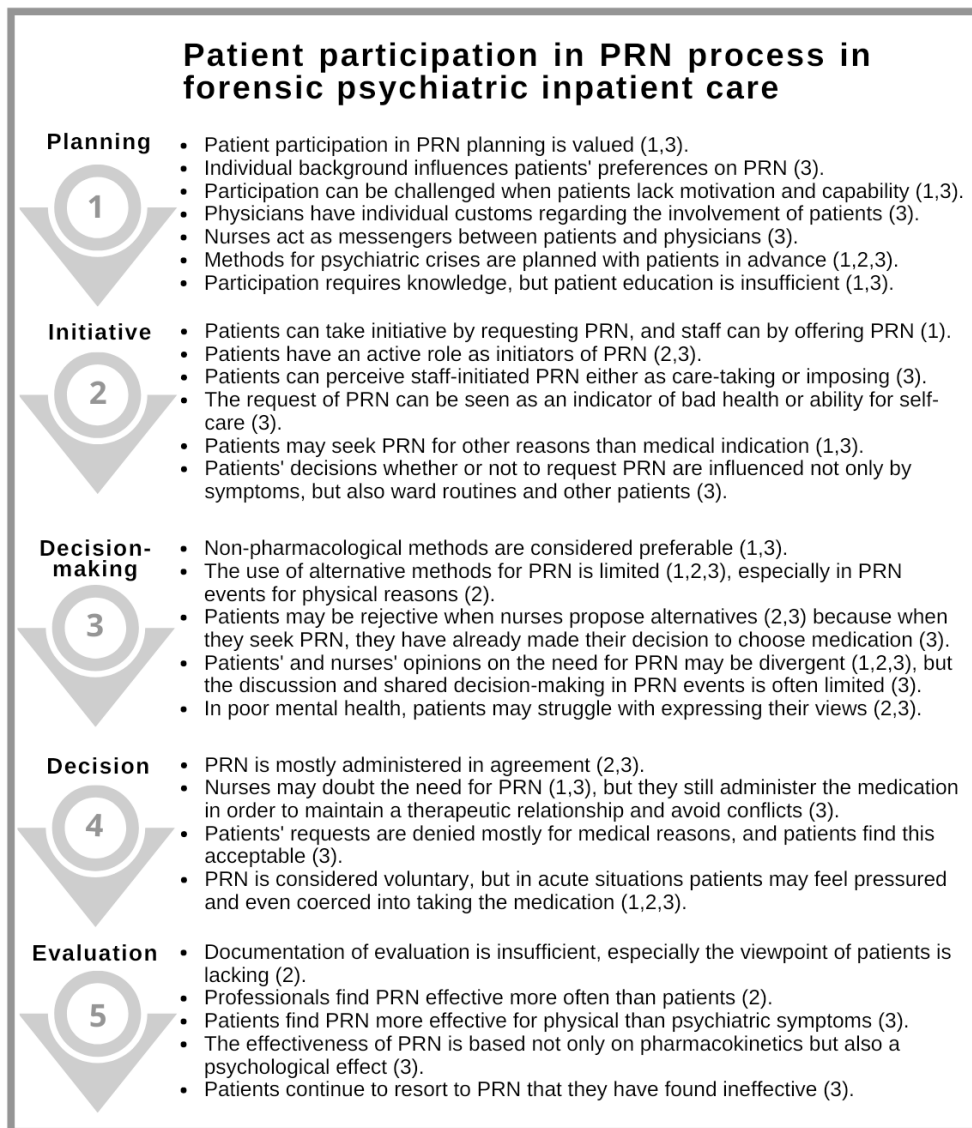


Figure 6. Patient participation in different phases of PRN process in forensic psychiatric inpatient care (numbers indicating the study phases).

6 Discussion

6.1 Discussion of the results

The study gained new knowledge on what patient participation in PRN is and how it occurs in forensic psychiatric inpatient care. Forensic psychiatric inpatients were found to be special with regard to patient participation in PRN. Their participation was connected to their illnesses that caused their need for PRN as the illnesses affected their ability to participate and take responsibility in their care. To participate, patients needed adequate knowledge of medication. Patient participation in this patient group was also challenged by a lack of motivation to participate; patients often adopted a passive role in collaboration with professionals. However, patients had other ways of being active: they gained knowledge, observed the ward environment and made independent decisions about when to seek PRN.

Patient participation was also connected to the process of PRN. Patients entered into PRN care with individual preferences. Their participation in PRN planning was unsystematic and dependent on both patients' endeavors and professionals' actions. Non-pharmacological methods were planned in advance, and patients emphasized their use. Still, they could be reluctant to accept nurses' proposals for alternatives. Patients had an active role in initiation as most of the PRN was administered at the request of patients. Discussions in the PRN events were limited but PRN was mostly administered in agreement. The decision of administration strongly lay with patients. However, when patients suffered severe symptoms, nurses needed to balance between a patient's wishes and the professional responsibility to take care of the patient. Patients found PRN more useful for physical symptoms than for psychiatric symptoms, but their feedback on PRN was rarely documented.

Forensic psychiatric inpatients as a special group in relation to patient participation in PRN

From the viewpoint of patient participation, it is crucial that patients' care is based on their individual needs. This study confirmed the earlier knowledge that PRN is one part of comprehensive forensic psychiatric care that combines pharmacological and non-pharmacological methods (Howner et al., 2020; MacInnes & Masino, 2019;

McIntosh et al., 2021). There is a wide selection of interventions that can be used in psychiatric care (Baker et al., 2021). However, severe mental illness limits the selection of applicable interventions, and sometimes PRN helps patients to perform in their daily life and also to use other methods. Thus, PRN can be the good care that the patients have a right to receive (Act of the Status and Rights of Patients 785/1992; Health Care Professionals Act 559/1994).

The results denote that the role of psychotropic PRN can be less important in forensic psychiatric care than in acute mental health settings. While 70–90% of patients have used psychotropic PRN in acute settings (Baker et al., 2008; Martin et al., 2017; Stewart et al., 2012), the current study as well as previous reports from forensic care (Hales & Gudjonsson, 2004; Justice Health and Forensic Mental Health Network, 2018) have found that about half of patients have taken PRN for psychiatric reasons. This finding is even more considerable because, due to long period reviewed in the current study, the expected result was a higher number of PRN users. This can be explained with the fact that, in acute psychiatric care, patients usually have psychotic and other acute symptoms, but in forensic psychiatric care, these symptoms have often been successfully managed with regular medication and comprehensive care. This study did not explore how the patients in the sample had used PRN at the beginning of their admission. This needs to be taken into account when the results are compared with studies from acute mental health settings. Further, PRN use may differ within forensic psychiatric care, between forensic patients and dangerous- or difficult-to-treat patients.

PRN had a more pertinent role among minority of patients, similarly to earlier literature on psychotropic PRN use (Haw & Wolstencroft, 2014; Martin et al., 2017; Wright et al., 2012). A new finding was that these patients were keen to use PRN for both physical and psychiatric reasons. It is known that physical health problems are prevalent among people with severe mental illnesses (Hert et al., 2011; WHO, 2018). Still, the frequency of PRN used for different physical symptoms raises concerns. It is important that patients are consulted about their physical health needs and how they consider PRN in their care. It is also urgent that patients with repeated PRN use are recognized and that the possible reasons behind this are explored. Severe mental illnesses and physical conditions explain the use of PRN as it can provide significant help for various acute symptoms. However, the findings from this study agree with earlier literature (Cleary et al., 2012; Usher et al., 2009) in that patients may seek PRN for other reasons than medical indications. Agreeing with a discussion from a study of PRN use in long-term care residents with memory problems (Griffiths et al., 2019), continuous use of PRN can be a positive sign of recognizing and treating patients' health problems, but it can also be a sign of using medication too easily or for other reasons than for what the medication has been prescribed, or an indication that a proper medical review has not been conducted.

In forensic psychiatric care, patients' abilities to participate were linked to their health. The results showed that patients could struggle with expressing their PRN needs, participating in discussions, embracing medication knowledge and even understanding the idea of as-needed medication. This finding is in line with previous knowledge that mental health illnesses and disabilities challenge patient participation (Livingston et al., 2013; Losier et al., 2017; Magnusson et al., 2020; Selvin et al., 2021). This was especially the case in earlier phases of recovery. Noteworthy, PRN was most needed in these phases, so it is important to find ways to promote patient participation among patients in poor health. Based on results, the level of patient participation usually increases during rehabilitation while psychiatric symptoms abate. This is most probably also a result of encouraging patients to take more responsibility.

From the viewpoint of patient participation in PRN, it is important to evaluate patients' competence in taking responsibility (ICN, 2012) for their PRN use. Some forensic psychiatric patients will need inpatient care for the rest of their lives, and this speciality is important so that these individuals are taken care of. However, the ultimate goal of forensic psychiatric care is usually the rehabilitation of patients so that they can live a more independent life, and a key aspect in this recovery is patients taking responsibility for their self-care (McKeown et al., 2016; Selvin et al., 2021). To manage in outpatient settings, patients need to have opportunities and support to learn to decide and regulate their PRN use independently (McCarthy et al., 2013). Another new finding is that nurses rarely offered PRN to patients; this possibly reflects staff allowing space for patients to take responsibility for themselves.

To participate in PRN, patients need knowledge of medication (Baker et al., 2007a; Cleary et al., 2012; Duxbury et al., 2010a). Based on interviews, patients gained information about PRN from different sources. However, as noted in earlier literature (Hilden et al., 2020), patients could acquire misleading information, thus they need support in finding reliable sources of knowledge. It is important to find out what patients know about medication and verify their current knowledge and needs for counselling. Patient education on PRN has been found to be crucial but insufficient both in this and earlier studies (Cleary et al., 2012; Hilton & Whiteford, 2008). This is discordant with the right of patients to receive adequate information about their treatment (Act on the Status and Rights of Patients 785/1992).

The findings show that patient participation was connected with the patients' role that they had adopted, or were expected to adopt, in forensic psychiatric care. This was especially the case in relation to patients' motivation to take an active role, which has been found to be an important antecedent for patient participation in PRN (Baker et al., 2006; Duxbury et al., 2010a; Hamann et al., 2011b; Stewart et al., 2010). Lack of motivation can be due to mental illness, but the results also suggest that patients may draw back from collaboration because they perceive that their

views are not valued. Supported by earlier literature (Haines et al., 2018; Hörberg, 2018; Nicholls & Goossens, 2017; Selvin et al., 2016), this finding indicates that it is still a current goal to dissolve paternalistic care culture and the identification of patients as passive recipients in their treatment.

It has been suggested that in forensic psychiatric care, patient participation can be promoted by involving patients in small decisions that they are able to make in this context (Söderberg et al., 2020). Based on the findings, PRN provides opportunities for patients to make decisions. It can even be that in a restricted and structured care, patients use this opportunity not only to alleviate their acute symptoms but also to experience autonomy and use all the opportunities that they have to make decisions. Noteworthy, forensic psychiatric care can also be a fruitful context when it comes to patient participation. It enables working relationships between patients and staff, which are crucial for patient participation (Angel & Fredriksen, 2015; Dutta et al., 2016; Halabi et al., 2020; Jørgensen & Rendtorff, 2018).

Another important finding of this study was that patients had an active role that went beyond the visible involvement with professionals; they discussed and gained medication knowledge, observed their environment, and made decisions about timing their PRN requests. This active role of patients adds to earlier knowledge on PRN administration, which has suggested that the role of patients is more or less passive (Barr et al., 2018; Cleary et al., 2012; Price & Baker, 2013). The findings indicate that the interaction between patient and nurse in PRN administration events is only a part of a longer process of patient participation.

Finally, the role of patients was determined by their relations with professionals. Patients could feel it when their opinions on the need for PRN collided with those of professionals. On the other hand, patients and nurses might form a group distinct from physicians, who they positioned at the top of the hierarchy, similarly to a previous study (Stacey et al., 2016). Earlier literature on mental health has described this kind of “us versus them” situations. Stacey et al. (2016) reported that occupational therapists perceived that they are on the patients’ side unlike other professional groups. Jansen and Hanssen (2017) reported that nurses can be more loyal towards the system than towards their patients. In two studies conducted in forensic settings (Barnao et al., 2015; Marklund et al., 2020), patients have illustrated the “us versus them” situation between patients and nurses. Achieving patient participation is challenging if the stakeholders perceive that they are on different sides instead of having a common aim, namely what is best for the patients.

Patient participation in the process of PRN

The findings reflected patient participation in the PRN process and collaboration between patients and professionals. Patients entered into the collaboration with their individual preferences, and their participation was unquestionably valued, at least in theory. Still, patients with strong preferences to participate could be perceived as difficult, as in earlier studies (Beitinger et al., 2014; Hamann et al., 2011a).

Patient participation in the planning of their medication has been emphasized in mental health care (Mistler & Drake, 2008; Sullivan & Rae, 2014; Torrecilla-Olavarrieta et al., 2020). However, based on the integrative review, patient participation in planning of PRN is rarely studied. It has been recommended that PRN orders are discussed with patients (Hilton & Whiteford, 2008). The findings from the interview study suggest that this was insufficient and unsystematic, especially in relation to patients' irregular involvement in physician appointments. In current practice, patients were unaware of how and when they were able or expected to participate in discussion and decision-making. Finding that nurses aim to encourage passive patients and allay more active ones indicates that professionals determine the optimal level and form of patient participation. This is in line with earlier evidence that professionals perceive that it is their responsibility to determine the level of involvement due to patients' fluctuating degrees of insight (Chong et al., 2013; Huang et al., 2020).

The results suggest that patient participation in planning was related not only to patients' willingness but also to physicians' customs to include or exclude patients during the planning stage. Professionals' individual customs have been discussed previously (Jansen & Hanssen, 2017). Also, the finding that nurses act as messengers between physicians and patients is in line with earlier mental health studies (Jansen & Hanssen, 2017; Jimu & Doyle, 2019). The results highlighted that, to make decisions on PRN, physicians are dependent on information from nurses or from patients themselves. On the other hand, results suggest that PRN could be prescribed routinely without consulting the patient, as noted in an earlier study in acute mental health care (Baker et al., 2007a). The results of this study also denote that patients trusted professionals in pharmacological decisions. Importantly, patient participation does not mean that all patients' wishes should be fulfilled or that patients should make treatment decisions (Selvin et al., 2021). Health care professionals always have the responsibility of good medical practice (Hilden et al., 2020) and evidence-based care (ICN, 2012), which can conflict with the goals of patients.

Patient participation in planning included considering of non-pharmacological alternatives for acute psychiatric crisis. Patient participation is challenged in situations of patients' deteriorating health, and thus it is important that the preferred treatment methods have been discussed with patients in advance (Murray & Wortzel, 2019). Based on the results, patients were able to identify methods suitable for them,

and they strongly preferred non-pharmacological methods. Planning in advance could also be useful for the treatment of physical symptoms. Non-pharmacological methods were rarely documented in PRN events, and they differed from the methods found in the crisis plans. However, the methods in the plans and events for each patient were not compared. Still, from the viewpoint of participation, it is crucial that the planned methods are also used in patients' care.

Patient participation was evident in this study in terms of the initiation of PRN; the findings indicate that PRN, both for physical and psychiatric reasons, was most commonly administered at the request of patients. This was surprising because medication chart reviews have suggested that psychotropic PRN is usually initiated by staff (Akram et al., 2014; Curtis et al., 2007; Richardson et al., 2015; Stewart et al., 2012; Thapa et al., 2003). However, the results strengthen the suggestion that patients' PRN requests are more common in forensic psychiatric care (Barr et al., 2018). The difference can be due to long-term forensic admissions during which patients become more capable of requesting medication when needed. However, it can also be that patients in forensic psychiatric care are keener to use PRN or they request it to make contact with the staff.

The possibility for patients to request PRN and use it based on their own decisions was an important element of patient participation, in line with an earlier study (Martin et al., 2018b). This study provided the new knowledge that patients' PRN requests were based not only on the symptom but also the ward environment. For example, patients might hesitate to request PRN if nurses seemed busy. Similar results have been found earlier (Zhong et al., 2019). Work culture and conditions should be organized so that patients perceive that they are not responsible for the wellbeing of the staff but that the staff is there for them. Patients also preferred to seek PRN before night shifts to avoid longer waiting times. This could mean that they took PRN in the evening just in case rather than for acute symptoms. This raises a call to appraise PRN administration practices from the viewpoints of patients, staff, and medication safety.

The results suggest that patients' attitudes towards PRN offers are dichotomous. On one hand, patients trusted professionals' competence; they recognized that in poor mental health they were incapable of making decisions themselves and found PRN offers in such situations favorable. On the other hand, when nurses used their professional skills to assess the need for PRN, the situation was often volatile because patients wanted to decide on their PRN use themselves. This was surprising as earlier literature has suggested that patients with severe mental illness desire to be involved in the negotiation but entrust the final decision to professionals (Huang et al., 2020). However, nurses, especially in acute mental health care, have thought that patients can feel disempowered when they are offered PRN (Barr et al., 2018).

Based on the results, patients' and nurses' opinions on the need for PRN as well as possible non-pharmacological methods may be divergent. However, discussion and shared decision-making was found to be challenging and therefore limited. From the viewpoint of patient participation, it is important that all stakeholders' views are considered (Angel & Fredriksen, 2015; Thompson, 2007). This is especially important for patients with decreased competence in making decisions and taking care of themselves. Despite evidence that patients with severe mental illness are usually capable of requesting and refusing medication (Calcedo-Barba et al., 2020), it is obvious that patients need support in learning how to recognize the symptoms that require PRN and what other methods they can try. Further, it is the responsibility of professionals to prevent excessive dosing and polypharmacy related to PRN (Fujita et al., 2013; Hayes & Russ, 2016; Hilton & Whiteford, 2008).

The results agree with the concerns of insufficient use of non-pharmacological alternatives (Barr et al., 2018; Delaney, 2020; Hilton & Whiteford, 2008; Jimu & Doyle, 2019; Martin et al., 2018a). It has been stated that alternatives should be considered prior to psychotropic PRN (Kamphuis et al., 2013; Kuivalainen et al., 2017; NICE, 2015). Noteworthy, results of this study indicate that non-pharmacological methods are even more rarely considered when PRN is used for physical reasons. As found in a previous study, attempting any alternatives can be difficult when a patient is requesting PRN (Martin et al., 2018b). The results suggest that this can be because patients who are requesting PRN have already considered, and possibly tried, other methods. Thus, patients need to be encouraged to share their decision-making with professionals and discuss the need for PRN together, and not contact the staff only after they have already made their decision. This is particularly important with patients who are still learning symptom assessment and self-care.

The results of patients' influence on the decision of PRN administration were somewhat different from previous literature. The results suggest that patients decide when they use PRN. This is an important amendment to previous literature that has highlighted nurses' decisions and power in PRN administrations (Baker et al., 2007; Barr et al., 2018; Geffen et al., 2002; Hilton & Whiteford, 2008; Jimu & Doyle, 2019). Results agree that nurses have an option to deny a patient's PRN request based on their professional judgment (Barr et al., 2018; Duxbury et al., 2010b). However, this option was rarely used. This was surprising as in the previous study nurses responded that they often decline PRN requests (Barr et al., 2018). For the sake of maintaining the nurse-patient relationship and safety, nurses would sometimes refrain from disputing patients' wishes. This was also connected to the risk of patient aggression. Aggressive incidents in PRN events were rarely documented, but based on interviews, patients could react with violence if their request for PRN was denied. Hamann et al. (2020b) have noted that patients' aggressive behavior can be a sign of

frustration from not being heard. So, not only unreceived medication, but failed interaction can lead to a conflict.

Patient participation was also reflected in the option for patients to refuse medication offered by staff. In this study, patients usually accepted the PRN offered, but they also used their right to refuse PRN at times (Baker et al., 2006; Price & Baker, 2013), especially PRN for psychiatric reasons. Based on the results, when PRN is offered to patient who does not agree on the need for it, the situation can lead to an interface between voluntariness and containment. It was also common that PRN first refused was later accepted. The decision of patients to accept or refuse PRN offered by staff was not only based on their own assessment of the need for medication but also the possible consequences of this decision. As noted in earlier literature, forensic patients may perceive that they need to cooperate with treatment to be discharged (Losier et al., 2017) as their mental health and progress is assessed based on their compliance (Eivergård et al., 2019; Selvin et al., 2016). Staff has indicated that they often do not know if the patient truly agrees or just obeys (Olsson & Schön, 2016). Further, it has been reported that patients in forensic psychiatric care may accept medication only to avoid forced medication (Tomlin et al., 2020a). Even if PRN was not forced on patients, it is maybe too simplified to state that PRN is voluntary. However, it is important to note that patients were usually persuaded to take PRN when they suffered acute severe symptoms that PRN usually could relieve.

One concerning finding was that patient participation in evaluation of PRN was insufficient. From the viewpoint of patient participation, a patient's report of medication outcomes is crucial (Vaismoradi et al., 2020). This includes assessment of the response of PRN (Al-Sughayir, 2017; Hilton & Whiteford, 2008) and its possible side-effects (Baker et al., 2007). However, their feedback was rarely documented. Patients also had unfulfilled needs and expectations, especially concerning psychotropic PRN. Evaluation is also important in relation to events in which patients' requests for PRN are denied or patients refuse offered PRN. The results suggest that PRN denials often result in a satisfied settlement, probably due to a workable non-pharmacological method. In contrast, this was not achieved when patients refused PRN. This is in line with another study that found PRN refusals to be potential risk factors for violent behavior (Radisic & Kolla, 2019).

Finally, it is important that patient participation is recorded in nursing documentation. This includes reporting how patients participated when PRN was prescribed, who initiated PRN, discussions had during PRN events, and patients' feedback on PRN or other methods used to treat their acute symptoms.

Varying pathways to patient participation in PRN

The research underlying this thesis elaborates on the previous knowledge of patient participation among patients with severe mental illnesses. The results indicate that patients participate and are active in their PRN in ways that have seldomly been noted in earlier literature. This finding is of great worth for these patients who have deficiencies in their functioning that can influence their cooperation and knowledge (Beitinger et al., 2014; Hamann et al., 2011b; Huang et al., 2020; Jørgensen & Rendtorff, 2018; Stomski & Morrison, 2017; Tambuyzer et al., 2011). The active role of patients is a crucial element in the definitions of patient participation (Sahlsten et al. 2008; Tambuyzer et al., 2011). It is important to notice that taking an active role is not limited to patients' activity in their relationship and collaboration with health care professionals.

Based on the results, the optimal level of patient participation is often undefined or is assumed to be the more the better. Patient participation has been described in terms of taxonomies, from non-participation to patients taking their own decisions and control (Arnstein, 1969; Thompson, 2007). Earlier, focus has been on how patients could be more involved in their care to achieve shared decision-making. The results now agree that there is a need to support patients in being involved and taking responsibility in their care (Huang et al., 2020; Magnusson et al., 2020; Selvin et al., 2016). However, it seems that sometimes patients are on the other end of the continuum, and do take control (Arnstein, 1969). When considering the phenomenon of patient participation, patients need to be informed in their decision-making (Thompson, 2007). In this light, patients' PRN decisions made without adequate knowledge and understanding cannot be considered to be the highest level of participation. The results of this study confirm that forensic psychiatric patients' participation preferences are inconsistent (Selvin et al., 2021) and associated with their current mental health status (Selvin et al., 2016). Further, patients may be more willing to and capable of participating in certain issues related to PRN, or they may participate more in some phases of the PRN process than others. These findings demonstrate that patient participation in PRN is a dynamic and multidimensional issue that needs to be considered in relation to individuals, situations and contexts.

Patient participation was valued by both patients and professionals, similarly to earlier studies (Selvin et al., 2016, 2020; Söderberg et al., 2020). However, as noted in the previous literature (European Commission, 2012; Magnusson et al., 2020), patients and health care professionals may have individual perceptions on what patient participation means. Thus, it is important to ensure the same understanding of the goal when promoting patients to be involved in all PRN processes as recommended (Baker et al., 2007). It may be that patients and professionals are striving for the same goal, but through different pathways. Without a joint

understanding of the goal and how to reach it, it is hard to support or even understand each others' pursuit.

6.2 Limitations and strengths of the study

Integrative review

The limitations and strengths of the integrative review involve possible biases during the literature search, selection of the studies, and the data analysis (Whittemore & Knafl, 2005).

A challenge for the literature search was that patient participation is not a consistent concept but incorporates several overlapping concepts. It is possible that some papers that have discussed elements of patient participation were excluded from the search. However, to minimize the risk for publication bias, several synonyms were used in the search phrase. Further, a librarian was consulted in the planning of literature search. Publication bias was also decreased by conducting the literature search using four electronic databases as well as manual searches to cover all scientific publications (Whittemore & Knafl, 2005). However, the search was limited to papers published in English, which could have caused language bias and missed data from different cultural contexts (Stern & Kleijnen, 2020). Another limitation of the data collection is that the search was limited to peer-reviewed articles. More information of patient participation in PRN could have been found from grey literature, such as hospital guidelines.

To minimize the selection bias, two reviewers participated in the study selection process (Moher et al., 2009). Studies were selected based on inclusion and exclusion criteria determined in advance (Whittemore & Knafl, 2005). The selection process included quality assessment by two reviewers with method-specific critical appraisal tools (JBI, 2014).

To avoid bias in data analysis, the method and analysis process was explicitly identified before conducting the review (Whittemore & Knafl, 2005). A limitation is that the data extraction was conducted by one researcher. This could have caused personal bias regarding the selection of the key findings from the original studies. However, the data were placed into a table in detail. This enabled an evaluation and synthesis of the methods and results and their heterogeneity (Grant & Booth, 2009). The researcher worked in collaboration with two other researchers in the data analysis process until a consensus was reached.

The original studies in the review were from acute psychiatric care. Still, it provided a useful base for the empirical research in forensic psychiatric care.

Document analysis

The limitations of the document analysis concern the sample, data collection, the documents, and the generalizability of the findings.

A limitation regarding the sample is that the number of patients whose documents were reviewed was not based on power analysis and the patients were not randomly selected (Vassar & Holzmann, 2013). This decision was made because the hospital board outlined that patients' informed consent was needed to review their documentation. The sample ($n=67$) was 30% of the total population of potential participants ($N=224$), indicating a chance of not being representative. However, despite the lack of randomization, the sample reflected the hospital's patient demographics.

Another limitation is a lack of standardized instruments in data collection. However, the data extraction sheet was developed based on a thorough literature search and ensured with two pilot rounds (Vassar & Holzmann, 2013). Limitations also concern insufficient detail of the documents that were not produced for research purposes (Bowen, 2009). Several items that were operationalized from the literature, such as patient education, needed to be removed because they were not collectable from the nursing documentation.

A strength of this study is the length of study period that resulted in a large number of PRN events. The study also includes the events in which PRN was discussed but not administered. To identify these situations, daily nursing documentation was screened. This differs from earlier studies in which medication charts were reviewed. The validity of the data analysis was strengthened by consulting a statistical specialist who ensured the suitability of the statistical tests.

Another limitation of this study is that the empirical research was conducted in one forensic psychiatric hospital. However, this hospital offers treatment for two-thirds of Finnish forensic patients, and the data were collected from all 13 adult wards with different security levels. When it comes to the generalization of the results, special features of forensic psychiatry need to be considered (Seppänen et al., 2018). Even if the processes of mental health care are largely similar in different settings and patients (Duncan et al., 2010), forensic psychiatric patients' diagnoses, prevalence of substance use and the restrictive nature of the care due to the risk of violence make patient participation and PRN treatment different from such in other mental health settings. Future research is needed to examine if the results are valid in acute psychiatric care and for patients with less severe mental health illnesses.

It is worth noting that forensic psychiatric care systems and treatment cultures vary significantly between countries (Nedopil et al., 2015; Sampson et al., 2016). There is also variation in PRN treatment between organizations and countries (Edworthy et al., 2016). Further, patients and staff from other countries could have different perceptions of what patient participation in PRN is, and the practical

implications drawn from this study are not directly applicable in all forensic psychiatric settings. So, further studies are needed to confirm the results of this study. However, the need for autonomy, competence and relatedness are universal (Deci & Ryan, 2008), and the aim of patient participation has been accepted worldwide. Even if the results of this study are not generalizable and transferrable, they can still be used to open the discussion of people-centered care in different contexts and premises.

Interview study

The limitations and strengths of the interview study are discussed in relation to possible biases of the sample and data and the trustworthiness of the data analysis.

The sample was based on patients' and nurses' voluntary assignments, and it is possible that individuals with more intense opinions and experiences of patient participation in PRN registered to participate in the study. Also, patients who were not willing to participate or incapable of providing informed consent could have had different views on the study topic. Further, the staff member's presence during the patient interviews may have caused some patients to not enroll in the study or may have restricted the issues reported in the interview (Tong et al., 2007). The samples of document analysis and patient interviews might have overlapped, but this was not controlled for. Only one physician enrolled in the study, and it was decided that the focus would be on patients and nurses. Thus, the data provided knowledge of the role of physicians in the collaboration only from the viewpoints of patients and nurses.

Patients in forensic psychiatric care have severe mental illnesses, and this was taken into account in the planning of the study. The data quality needed to be compromised (Moyle, 2002) as some patients had difficulties concentrating on the topic and expressing their views. However, meaning units were extracted for the analysis from each interview. The interview study provided rich data and saturation was achieved in the analysis (Saunders et al., 2018).

The validity of qualitative research is related to possible researcher bias (Roberts et al., 2006). In this study, the researcher had expertise in mental health practice and research but no previous connection to the forensic psychiatric field. With this background, it was possible for the researcher to empathize with the interviewees' reality and understand the phenomenon of patient participation in PRN but still draw results from the data rather than presuppositions (Cypress, 2017). A strength of the interview study is that the same researcher planned the study, conducted and transcribed the interviews and was mainly responsible for the data analysis. Also, to store the content of the interviews, field notes were made (Phillippi & Lauderdale, 2018).

In the data analysis, a limitation was that a single researcher handled the original data as a whole and extracted the meaning units. However, the reliability was strengthened by a collaboration between two researchers in the data analyzing process (Roberts et al., 2006).

6.3 Practical implications

Based on the knowledge produced in this study, practical implications can be applied in forensic psychiatric nursing practice and management. These implications aim to promote patient participation in PRN as part of people-centered forensic psychiatric care.

Implications for nursing practice focus on patient participation in PRN use on the wards. It is important to better recognize the level of independency and responsibility that a patient can take and to ensure adequate support. Administration events can be volatile, and this is a challenge for dialogue and shared decision-making, which are crucial elements of patient participation. First, patients have a right to seek PRN when they feel a need for it and the right for their views to be heard, but also that the competence of health care professionals is used in the assessment of the need for medication. It is important to find ways to communicate so that interaction and expressing views do not lead to a feeling of being unheard or untrusted. Nurses must have practical knowledge on how to handle patients' and professionals' divergent views and compromise in PRN events. This includes the discussion of when to act based on the patient's wishes and when professionals have an ethical responsibility to decide on behalf of the patient. Second, good care of patients includes them being offered PRN based on the observation of professional. Because several factors can complicate the two-way communication during PRN events, discussions and planning of PRN and the treatment in acute situations in advance is crucial.

Involving patients in the planning of PRN as part of their care can help them to learn to use PRN based on their symptoms. Patients' PRN decisions can be influenced by various factors that are important to recognize and discuss when planning and assessing patients' PRN use. The continuous evaluation of patients' care should include their experiences of the effectiveness of PRN and using this information so that patients' PRN treatment is based on their needs as much as possible. It is also important that all the stakeholders are informed of the aim and implementation of patients' PRN medication. However, it seems that the best time to have this conversation is not when patient is requesting PRN. PRN is part of patients' comprehensive care, and thus it can be most fruitful to discuss its role when planning treatment in general. Patient participation can be promoted by providing manageable information and sharing responsibility in smaller decisions. If PRN

decisions are made, for one reason or another, without the patient being present, the patient has the right to be informed. Also, the nurses need to have precise and up to date instructions from a physician to execute PRN medication care on the wards. Planning of PRN is connected to planning of non-pharmacological methods and care as a whole. Forensic psychiatric patients commonly have physical health problems and planning of PRN and other methods is also important when it comes to physical symptoms.

Forensic psychiatric patients' mental illnesses affect their abilities and motivation to seek an active role and participate in planning and decision-making of PRN. Thus, their participation should be more systematically promoted and supported. The level of patient participation needs to be adjusted to the patient's current health and abilities. Patient participation usually increases during recovery, but it is also important to discuss how patient participation can be promoted among patients in poor health phases or constant impairments. It is crucial to pay attention to patient participation from the beginning of the care so that patients feel that they are a significant agent and the center of their care. Further, the level and form of optimal patient participation should be defined with patients so that they know what kind of role they should or could play in cooperation. It is also key that the care culture and practices are supportive for patient participation because participation can be learned and adapted, as can a passive role. By motivating patients to be involved and giving positive feedback on their participation, professionals express that patients' involvement and active role is desirable. Providing training for shared decision-making to both severely ill patients and staff has been found to be an efficient way of achieving patient participation in their care (Hamann et al., 2020a).

Patient participation needs to be promoted also at the organizational level through management. To ensure equal opportunities for patients, protocols for a systematic approach throughout the PRN medication process are needed. Management should also ensure patients' privacy in their discussions about PRN with the staff. In the organization, patients' adequate knowledge can be promoted by patient education and counselling, requiring clear responsibilities between professionals. Also, in addition to guidance on patients' care plans at the organization level, it is important to ensure that patients are invited regularly to review and assess their PRN medication in relation to their psychiatric and physical health needs. Management should ensure sufficient resources for the staff to promote patient participation in PRN. Nurses also need both knowledge and resources to implement non-pharmacological methods as alternatives to PRN. Patient participation in PRN could be promoted by developing nursing documentation. It could be useful to have alerts of repetitive PRN use to identify high users of PRN and have more focused discussions with those patients about the health needs and

their possible treatment methods. Also, current documentation practice does not guide nurses to observe and report patients' views on the effectiveness.

6.4 Suggestions for further research

The findings of this study provide the following suggestions for further research:

- Further research should be conducted into patient participation during PRN events. Future studies could use, for example, the observation method in clinical practice.
- Future investigation could also focus on the finding that patient participation increases during the recovery, namely, what this increase is based on and how it can be supported.
- As earlier studies have focused on acute mental health care, more research is required to promote and develop patient participation and evidence-based PRN care in forensic psychiatric care.
- More knowledge is needed on psychiatric inpatients' PRN use for physical reasons, particularly, why some of the patients need somatic PRN so often and if non-pharmacological alternatives are considered in acute physical symptoms.
- An important issue for further research is how and from where the patients seek and evaluate medication information. This includes discussions of PRN among patients. Furthermore, future studies could examine what role family members and others close to patients play in patients' PRN.
- Questions still remain on how patients participate in the planning of their PRN, especially in relation to physicians' practices. It is important to gain first-hand knowledge from physicians about their perceptions of patient participation in PRN. One relevant issue for future investigations is how patients' opinions on the effectiveness of PRN are considered in the medication planning.
- Patient participation and shared decision-making in PRN have mostly been studied in Western high-income countries, and more research is needed to gain a comprehensive picture of patient participation in PRN internationally.

7 Conclusions

PRN is one method of responding to forensic psychiatric inpatients' care needs, and patient participation in PRN can support patients in alleviate suffering and managing their daily lives. Patient participation in PRN in forensic psychiatric inpatient care means that PRN care is based on patients' individual needs, they have an active role and the views of both patients and health care professionals are considered in the planning, administration and evaluation of patients' PRN medication.

Forensic psychiatric inpatient care is a special context for patient participation in PRN due to patients' severe illnesses that, on one hand, cause needs for PRN and, on the other hand, hamper patients' motivation and capability to participate in the PRN medication process. Patients may struggle with positioning themselves into collaboration with professionals, but may make independent decisions related to the use of PRN. It is important to accommodate patient participation with patients' current health and capability so that patients are provided support in recognizing their symptoms and medication needs whenever the patient is capable of doing so. PRN treatment includes the patient making their own decisions, and as such it can support patients' autonomy. Promoting patients' knowledge and ability to take responsibility for their PRN is part of recovery-oriented forensic practice. The results of this study suggest that development of systematic approaches is needed to fill the gap between patients' preferred and experienced levels of participation in planning PRN. This includes defining the roles and responsibilities of health care professionals and expressing to patients that their contribution in collaboration is valued.

It is important to examine how patient participation has been promoted in psychiatric care and its management to identify and disseminate good practices. Patient participation in PRN in forensic psychiatric care has rarely been studied, and more evidence is urgently needed to confirm the results of this study. More research is especially needed on patients' PRN use for physical reasons, patients' medication knowledge and information seeking as well as collaboration between patients, nurses and physicians.

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“We can lift ourselves out of ignorance, we can find ourselves as creatures of excellence and intelligence and skill. We can be free! We can learn to fly!”
~ Richard Bach ~

21 August 2021
Kirsi Hipp

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Appendices

APPENDIX 1

Appendix Table 1. Search terms used in electronic databases to collect the literature throughout the study process.

CONTENT	COMBINED SEARCH TERMS
Patient participation	("patient participation" OR "patient involvement" OR "patient engagement" OR "user participation" OR "user involvement" OR "user engagement" OR "client participation" OR "client involvement" OR "client engagement" OR "shared decision making") AND (mental OR psychiatric) AND (inpatient OR ward* OR hospital* OR forensic)
PRN medication	(PRN OR "pro re nata" OR "as needed medication" OR "unscheduled medication") AND (mental OR psychiatric) AND (inpatient OR ward* OR hospital* OR forensic)
Forensic psychiatric care	"forensic psychiatric hospital"[Title/Abstract] OR "state hospital"[Title/Abstract] OR "security psychiatric hospital"[Title/Abstract] OR "forensic psychiatric care" OR "forensic psychiatric nursing" OR "forensic psychiatric treatment"

APPENDIX 2

Appendix Table 2. Items of the data extraction sheet used to collect the data from patients' nursing documentation (Phase II).

Background information	References
Age	Curtis et al., 2007; Goedhard et al., 2007; Hamann et al., 2011a; Richardsson et al., 2015; Stewart et al., 2012; Usher et al., 2009; Wright et al., 2012
Gender	Curtis et al., 2007; Goedhard et al., 2007; Hamann et al 2011a; Richardsson et al 2015; Stewart et al 2012; Usher et al., 2009; Wright et al 2012
(Finnish) language	Curtis et al., 2007; Richardsson et al., 2015; Stewart et al., 2012; Usher et al., 2009; Wright et al., 2012
Level of education	Hamann et al., 2011b; O'Sullivan & Rae, 2014; Wright et al., 2012
Status	Mental Health Act 1116/1990
Date of hospitalization	Baker et al., 2008a; Wright et al., 2012
Primary diagnosis	Curtis et al., 2007; Goedhard et al., 2007; Hamann et al., 2011a; Richardsson et al., 2015; Stewart et al., 2012; Usher et al., 2009; Wright et al., 2012
Addictive disorder diagnosis	Baker et al., 2007b; Cleary et al., 2012; Usher et al., 2009
Global Assessment of Functioning (GAF) -value	Hamann et al., 2011b; NICE, 2009
Violence risk screening tool (V-risk-10) -value	Baker et al., 2007b; Goedhard et al., 2007; Molloy et al., 2012; Stewart et al., 2012; Usher et al., 2009
Planning of PRN	References
Prescriptions of scheduled medication	Goedhard et al., 2007; Srivastava, 2009; Wright et al., 2012
Prescriptions of PRN medication	Baker et al., 2008a; Stewart et al., 2012
Medication mentioned in a plan for crisis	Baker et al., 2006, 2007, 2008a; Cleary et al., 2012; Curtis et al., 2007; Donat, 2005; Friedman et al., 2012; Hilton & Whiteford, 2008; Lorem et al., 2014; Mikesell et al., 2016;
Other methods in a plan for crisis	O'Sullivan & Rae, 2014; Usher et al., 2009; Wright et al., 2012
PRN events	References
Time of administration	Baker et al., 2008a; Curtis et al., 2007; Duxbury et al., 2010b; Hilton & Whiteford, 2008; Molloy et al., 2012; Stewart et al., 2012; Wright et al., 2012
Type of PRN event	Baker et al., 2006; Cleary et al., 2012; Curtis et al., 2007; Duxbury et al., 2010a, 2010b; Hilton & Whiteford, 2008; Molloy et al., 2012; NICE, 2009; Richardson et al., 2015; Stewart et al., 2012; Usher et al., 2009; Wright et al., 2012
Reason of PRN event	Baker et al., 2007b; 2008, Cleary et al., 2012; Curtis et al., 2007; Friedman et al., 2012; Goedhard et al., 2007; Hilton & Whiteford, 2008; Molloy et al., 2012; Srivastava, 2009; Stewart et al., 2012; Usher et al., 2009; Wright et al., 2012
Route of medication	Baker et al., 2008a; Baker, 2011; Curtis et al., 2007; Hayes & Russ, 2015; Molloy et al., 2012; Srivastava, 2009

Non-pharmacological method	Baker et al., 2006, 2007, 2008a; Cleary et al., 2012; Curtis et al., 2007; Donat, 2005; Friedman et al., 2012; Hilton & Whiteford, 2008; Lorem et al., 2014; Mikesell et al., 2016; O'Sullivan & Rae, 2014; Usher et al., 2009; Wright et al., 2012
Initiator of non-pharmacological method	
Feedback/effectiveness	Baker et al., 2007b, 2008a; Cleary et al., 2012; Curtis et al., 2007; Duxbury et al., 2010b; Lorem et al., 2014; Molloy et al., 2012; Srivastava, 2009; Stewart et al., 2012; Wright et al., 2012



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