

## Research Article

# Mental Health Nurses' views and Practices Concerning pro re Natapsychotropic Medications in Inpatient Psychiatric Wards

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## Abstract

**Introduction:** Pro re nata (PRN) or "as needed" psychotropic medication is a vital component of inpatient mental health care and is mainly a nursing responsibility.

**Aim:** To explore the nurses' views and practices concerning PRN psychotropic medication administration and to reveal any possible obstacles and requirements.

**Method:** The sample consisted of 103 full-time registered mental health nurses and nurses' assistants who worked in inpatient wards in two psychiatric hospitals in Greece. Data was collected using a semi-structured interview schedule. A descriptive analysis was applied to describe the nurse's interventions in each critical incident for each patient's behavioural problem.

**Results:** Nurses reported that PRN medication was more likely to happen for physical violence to others (36.9%), violence to property (32.1%), deliberate self-harm behaviour (24.3%), verbal violence (23.3%) and acute anxiety (20.4%).

**Discussion:** It is important that nurses base their decisions about PRN administration on sound clinical judgment. The clinical effectiveness of PRN medications has yet to be established.

**Conclusion:** Mental health nurses need to be made aware of protocols, best practice and evidence-based guidelines, especially with regard to the use of PRN psychotropic medications.

**Keywords:** Medications; Mental health; Nurses; Psychotropic; PRN

## Introduction

PRN is an acronym for pro re nata (PRN) or "as needed" medication is a vital component of inpatient mental health care as it is a commonly used adjunct to routinely prescribed medication. Pro re nata is a Latin phrase meaning "for an unforeseen need or contingency" (Dictionary, 2020). The most common type of PRN medication administered by mental health professionals in acute mental health care settings are psychotropic medications. Psychotropic comes from the Greek word "psyche", which indicates the soul, spirit or mental activity and "tropos" which come from "trepo" and means "turning" (Wordreference, 2020)? Hence, what turns the mind. Psychotropic medications affect chemical levels in the brain, which can affect mental activity, behavior or perception and act as a mood-altering drug (Dictionary, 2020). Psychotropic medications, considered the mainstay of current psychiatric treatment, are used to reduce agitation, distress or aggression, with benzodiazepines or antipsychotics the usual drugs of

choice [1]. PRN prescription and administration is a common practice [2]. Approximately three-quarters of inpatients, regardless of setting, receive "as needed" medications during the course of their admission [3-5]. As a feasible, patient-centered approach, PRN has the potential to encourage patients to participate in self-care [6] and manage signs and symptoms [7]. PRN prescription may increase efficiency of care [8]. The practice is widespread [9], with 68%-83.9% of mental health patients receiving PRN-medication at least once during their care [10-12]. Patients are most likely to receive a benzodiazepine or typical antipsychotic as a PRN. Pro re nata is an important and under-researched clinical intervention in mental health wards [13]. The clinical effectiveness of PRN medications in mental health settings has yet to be established [14-16]. Limited data are available on adverse events related to PRN administration but the increased risks of harm due to PRN prescription and administration remains a concern [17,18]. In Greece, between 1984 and 2020, there has been a decrease in psychiatric hospital beds as a part of the psychiatric reform program concerning the de-institutionalization of the long stay patients, and the development of community mental health services. Although the two major psychiatric hospitals still exist, and psychiatric care is still mainly provided by these hospitals [19]. That means psychiatric nurses working in the hospitals play a key-role in patient care. Administration of as needed (PRN) psychotropic medication in psychiatric hospitals is mainly a nursing responsibility. In Greek psychiatric hospitals nurses and nurses' assistants as well, administer as required (PRN) medication. According to the Greek Law (Presidential Decree 351/1989; 210/2001; 216/2001), registered nurses have to act according to their decisions or medical instructions

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and being able to assess and meet patient's individual needs (hygiene, safety of himself or environment, comfort and health promotion). The *biopsychosocial model* is both a philosophy of clinical care and a practical clinical guide. In the context of prevention, diagnosis, treatment, rehabilitation and pain relief, registered nurses must be guided by scientific and professional knowledge, skills and experience, maintaining in each case their scientific and professional independence. Nurses' assistants should act after assignment and under supervision of registered nurses. Nurse prescribing of medicines is increasing worldwide, but in Greece they are not authorized yet. Additionally, the curriculum of Nursing Studies in the two main Universities (Faculty of Nursing, School of Health Sciences, National and Kapodistrian University Athens and Department of Nursing University of Western Attika), psychopharmacology is only one unit in the whole program of Psychiatric Nursing course. Nursing students in the bachelor's degree learn the basic knowledge of PRN medication and implementation according to nursing protocols and their main skills are acquired in the job as an everyday experience in a psychiatric unit. Nurses' assistants obtain less information even though in Greek Psychiatric Hospitals are in charge of medication administration. Data in previous research concerning PRN medication was gathered mainly from drug charts of inpatient patients and examined administration practices describing patterns of medication used [20-23]. Other studies have looked at antecedents to PRN administration, activities to reduce PRN medication and literature reviews [24-27]. Little is actually known about nurses' administration practices and the factors involved in their decisions surrounding this activity [28]. In Greece, although there have been some studies in psychiatric hospitals concerning nursing practice, there has been no research concerning the mental health nurses' views and practices on PRN administration. This research was based in a previous project concerning the nursing interventions in inpatient wards in critical incident [29].

## Objectives

The aim of the present study was:

- To explore the nurses' practices concerning medication administration
- To record nurses' views
- To reveal any possible obstacles and requirements

## Methods

### Design of the study and participants

The sample consisted of 103 full-time registered mental health nurses and nurses' assistants who worked 37.5 hours per week – three rotating shifts - in inpatient wards in two psychiatric hospitals. In the present research, given the fact that in Greek psychiatric hospitals an overlap between nurses' duties and assistant nurses' duties is evident (primarily due to important lack of personnel), the two teams were not separated [30]. These psychiatric hospitals are located in greater Athens with a capacity of 225 and 140 beds, respectively. The sample of nurses was randomly selected from the personnel list of the two major psychiatric hospitals. The only inclusion criteria for the study were the nurses to work full-time in an inpatient unit. Patients were admitted to the units mainly from the hospital's 24 hr emergency care unit.

### Data collection and analysis

Data was collected using a semi-structured interview schedule. The interviews lasted approximately 30 minutes to 1 hour (15 minutes for

structured questions and 15-45 minutes for nurses to note and discuss their ideas and concerns). The final schedule contained questions concerning medication administration (what type of medication they administered, how often, the existence of psychiatrist's order, and the documentation of medication administration). All interviews were audio-recorded. Nurses were also encouraged to provide any information concerning their medication administration practices and concerns about these practices. This procedure involved the administration of a blank sheet of paper where nurses, in their own words, wrote their views, ideas and concerns. Phrases and comments made by nurses are in "quotation marks". A descriptive analysis was applied to describe the nurse's interventions in each critical incident for each patient's behavioural problem.

### Ethical procedure

Written approval was obtained by the two hospitals' Ethics Committees. The personal interview took place in a private room by the first author. Assurances were given to nurses on duty, concerning confidentiality and anonymity.

## Results

### Demographic characteristics

The final sample consisted of 103 nurses, forty-four (42.7%) were males and 59 (57.3%) were females with a mean age of  $36.3 \pm 7.7$  years. Twenty-six (25.2%) had completed a four-year education at the University of West Attika, Department of Nursing and seventy-seven (74.8%) had a 2 year education in a Nursing Technical School. The mean years of work in a psychiatric setting were  $11.1 \pm 7.2$  years. The demographic characteristics of the sample are presented in Table 1.

### Type of intervention on critical incidents that required medication administration

Nurses when facing critical incidents that require medication administration, they administer the medication previously prescribed by the psychiatrist. If there are no previous prescriptions, they choose between three interventions:

- Call the Psychiatrist on call to prescribe medication.
- Call the Nurse on call to communicate with psychiatrist.
- Medication administration without previous prescribing and call the psychiatrist afterwards.

Ten case vignettes were included in this study that described patient's behavioural problems. Nurses were asked how they would handle these situations. The ten behavioural problems and the nurses' response are presented in Table 2.

**Agitation:** When the patient appears restless, the majority of nurses (50.5%) chose to contact the nurse on call, while a small proportion (14.6%), preferred to administer medication without previous prescribing.

**Table 1:** Socio-demographic characteristics of the sample (N=103).

Variables	Frequency (N)	Percentage (%)
Gender		
Males	44	0.427
Females	59	0.573
Education		
4-years	26	0.252
2-years	77	0.748
Mean age in years $\pm$ SD	$36.3 \pm 7.7$	
Years of work $\pm$ SD	$11.1 \pm 7.2$	

**Table 2:** Percentage (%) of nursing interventions in psychiatric wards by the nurse on duty in critical incidents in case of no pre-medication order by the psychiatrist.

Nursing intervention	Call Psychiatrist on call	Call Nurse on call	Medication Administration Without previous prescribing
Critical incident	N (%)	N(%)	N(%)
Agitation	36 (34.9%)	52 (50.5%)	15 (14.6%)
Acute anxiety	17(16.5%)	65 (63.1%)	21 (20.4%)
Persistent insomnia	62 (60.2%)	31 (30.1%)	10 (9.7%)
Psychotic symptoms	58 (56.3%)	35 (34%)	10 (9.7%)
Verbal violence to others	43 (41.7%)	36 (35%)	24 (23.3%)
Violence to property	51 (49.5%)	19 (18.4%)	33 (32.1%)
Physical violence to others	49 (47.6%)	16 (15.5%)	38 (36.9%)
Disturbed behaviour	18 (17.5%)	85 (82.5%)	-
Provocative attitude	15 (14.6%)	84 (81.5%)	4 (3.9%)
Deliberate Self-harm Behaviour	62 (60.2%)	16 (15.5%)	25 (24.3%)

**Acute anxiety:** The majority of nurses (63.1%) also used to contact the nurse on call.

**Persistent insomnia:** Sixty two nurses (60.2%) preferred to contact the psychiatrist on call when the patient could not sleep and 10 nurses (9.7%) immediately gave a sleeping pill without previous prescribing.

**Psychotic symptoms (hallucinations):** Fifty eight (56.3%) nurses contacted the psychiatrist on call, another 35 (34%) preferred to contact the nurse on call and a small proportion (9.7%), immediately administered medication without previous prescribing.

**Verbal violence to others:** In this situation, we found different approaches. Forty three participants (41.7%) called the psychiatrist, 36 (35%) called the nurse and 24 (23.3%) administered PRN medication.

**Violence to property:** The majority of the nurses (49.5%) called the psychiatrist, while a significant proportion (32.1%) administered PRN medication prior to any other intervention.

**Physical violence to others:** Forty nine nurses (47.6%) reported that they called the psychiatrist, while 38 (36.9%) preferred to administer medication without previous prescribing.

**Openly disturbed behaviour:** The great majority of participants (82.5%) contacted the nurse on call and there were no incidents of PRN medication.

**Provocative attitude:** The great majority (81.5%) called the nurse and only a very small proportion (3.9%) preferred to administer medication without previous prescribing.

**Deliberate self-harm behaviour:** Sixty two (60.2%) nurses contacted the psychiatrist on call. A significant proportion (24.3%) used to administer PRN medication.

## Discussion

In this study mental health nurses responded to questions about how, specifically, they manage patient critical incidents that require medication administration. Nurses administer the medication previously prescribed by the psychiatrist and if there are no previous prescriptions, they choose between three interventions: i) Call the Psychiatrist on call to prescribe medication. ii) Call the Nurse on call to communicate with psychiatrist. iii) Medication administration

without previous prescribing and call the psychiatrist afterwards.

### Reason for PRN medication

Nurses reported that PRN medication was more likely to happen for physical violence to others (36.9%), violence to property (32.1%), deliberate self-harm behaviour (24.3%), verbal violence (23.3%) and acute anxiety (20.4%). In most cases of patient violence to others (verbal and physical) and to property, the administration of medication was an important therapeutic intervention and was usually combined with other safety measures, mainly patient restraint.

Amongst critical incidents, violence presented a noticeable variation in nursing intervention, with most nurses to communicate psychiatrist on call (49.5% for violence to property, 47.6% for physical violence to others and 41.7% for verbal violence to others). Communication for psychiatrist on call is the most common intervention and for deliberate self-harm behaviour (60.2%). From nurses' statements, it is deduced that nurses feel insecure and express their lack of knowledge concerning such behaviour. As has been demonstrated by other studies, there is an inadequate risk assessment that leads to insufficient management of these cases [31,32]. Administration of PRN medication was 14.6% for agitation and 9.7% for persistent insomnia and psychotic symptoms. Nurses noted that other interventions may be more effective, but there is a lack of available time, which makes obligatory the medication administration [33]. Rarely was given medication without previous prescribing for provocative attitude (3.9%) and never for disturbed behaviour. Usher Lindsay Sellen found that the main reason listed for administering PRN medication was insomnia (25%) followed by anxiety (13.1%), agitation (12.3%) and restlessness (5.6%). Other studies found that agitation was the most common reason for administration [34] or patient distress (McLaren, Browne & Taylor, 1990). In our study acute anxiety (63.1%) and agitation (50.5%) were the most prevalent reasons for communicate with nurse on call, but they choose to communicate with psychiatrist on call for persistent insomnia (60.2%) and psychotic symptoms (56.3%).

### The Greek context

In Greece, nursing profession deals with numerous significant problems. It has to be noted that in the last few years even though new outpatient and rehabilitation units have been created, the patient imports in the psychiatric hospitals do not appear to have changed significantly [35]. Patients admitted in these hospitals are suffering from severe mental illness. According to the Greek legislation, a psychiatric nurse is unable to prescribe medication or administrate any type of medication without previous prescribing by the psychiatrist on call in the unit. Doctors are able to direct a medication scheme to be administered by a nurse, at the nurse's discretion, to meet the patients' needs. In the Greek health care system, nurses have limited autonomy and the law is not clear concerning the nurses' intervention framework. This adds extremely high stress to nurses' already existing work overload [36]. It must be demonstrated also that an important percentage of nurses working force in Greek Psychiatric Hospitals is consisted of nurses' assistants whom according to the existing law medication administration is not included in their duties. This study has shown that nurses' assistants are responsible for medication administration as registered nurses of 4<sup>th</sup> year education. In Greek psychiatric hospitals an overlap between nurses' duties and assistant nurses' duties is evident, primarily due to important lack of personnel [37].

## Nurses' quotes

From nurses' quotes, it becomes clear that there are more problems concerning medication administration. One nurse quoted that "My choice of medicine possibly would be different, but I don't have the authority to prescribe medication". Another nurse has noted that "If the doctor has forgotten or didn't prescribe medication for a patient, I have to contact the psychiatrist on call, and explain his/her medical record and eventually lose valuable time". Nurses use their assessment skills and discretion to determine if a patient needs extra medication. There remains a lack of understanding towards the clinical decision making process involved that leads a mental health professional to administer a PRN medication. The study of Baker, Lovell, Easton and Harris concluded that nurses should take into account the issues of power and control when administering "as needed" medication and that the provision of adequate treatment information should be a priority to enable informed choices to be made about this form of medication. In this study, most PRN psychotropic medications were reported as nurse-initiated, whilst the initiator was not documented on a significant number of occasions. The same results indicated in other studies [30-33]. Documentation that includes the reason for administering, the person requesting, and outcome of the PRN is the minimum necessary for safe practice at any professional level. Nurses' quotes have shown that their main concern is the legal protection of their autonomous practices. As a nurse has noted "I will administrate the appropriate medication in the moment not to waste time, but this practice really confuses me as a professional. It's an internal battle every time between patients' welfare and my autonomy by the law". In the study of Usher & Lindsay, 70.2% of the patients who received PRN psychotropic medications were voluntary and 29.8% were involuntary. Another nurse pointed "I prefer to act before something happened by giving a pill, because if the things start to get more violent or dangerous, it would be much more difficult and at this point an injection is needed. Of course, IM administration is not a routine, but happens if it must". One participant explained that there "was a balance to giving PRN medication and trying to avoid the use of seclusion, which is more restrictive and potentially more damaging to the therapeutic relationship".

## Doctors' practices

In many cases psychiatrists leave the ward without giving clear instructions on how to manage the difficult patients. In most of the cases, the instructions concern an injection of sedative medication. On one hand the law gives low autonomy to nurses and on the other hand, hospitals organization requires the nurse to act autonomously. This fact causes the nurses a sense of helplessness. In many cases nurses act by their conscious according to the critical incident jeopardizing their position and professional status. Baker, Lovell & Harris found that nurses' decisions to administer "as needed" medications were influenced by safety, knowledge of the patient and levels of patient distress. They also found that nurses used PRN medications as a first rather than a last resort due to limited skills, less years of clinical experience, time pressure and low or inadequate staffing levels. A common theme emerging from the data was the uncoordinated approach of regular medication prescribing within the team. This was viewed as a fundamental reason for PRN use and for the repeated high rate of use with some consumers. Other studies also identified poor collaboration between nurses and doctors over the prescribing and administration of PRN and how this impacted on the therapeutic management [37]. The frequent use of PRN medications in acute mental health environments also suggests a lack of consumer

involvement in care decisions and formulation of their management plans. The person needs to be involved in decisions about the medications they are receiving, and the treating team should have regular reviews of prescribing practices. From the data concluded that a common protocol prescription of "as needed" medication in Greece is Aloperidin, Diazepam and Biperiden Hydrochloride (all together) as intramuscular (IM) usage for new patients, whilst if they are already some days at the ward, the oral (po) administration is the most frequently cited route of administration and usually includes Diazepam 5 mg or 10 mg (max 20 mg), Quetapine 50 mg or 100 mg and Levomepromazine 25 mg. The most common diagnostic groups were schizophrenia and major depression, accordingly to the results of Usher, Lindsay & Seller. Also, males seem to receive more frequently PRN antipsychotic medications.

## Study limitations

In this study nurses' descriptions about management of critical incidents, depended on the respondents' memory. Even though the use of vignettes facilitated the collection of data, nurses' interventions are based on their recollections of past experiences. Another limitation of this study is that the personal interview took place in the hospital (in a private room), and although assurances were given to nurses on duty, concerning confidentiality and anonymity, this may have affected their freedom of expression. Future studies regarding PRN medications should include patient variables and personal and professional characteristics of the nurses.

## Implications for Practice

In common with findings from other research the nursing role of prescribing medication presupposes specific training and that seem to be a priority in Greek nursing education. The practices of medication administration especially for nurses' assistants even as supplementary training are essential. Mental health nurses need to be made aware of protocols, best practice and evidence-based guidelines to ensure best practice outcomes for patients in mental health settings, especially with regard to the use of PRN psychotropic medications as a behaviour management strategy.

## Conclusions

This study was successfully added to the available information surrounding mental health nurses' practices with PRN medications. Selection of appropriate psychotropic PRN medication is often left to the discretion of nurses. Decision-making regarding "as needed" medications is guided more by custom, practice and informal "personal protocols" than by reference to evidence or practice guidelines. Nursing documentation of PRN medication administration is often inadequate. Given the limited evidence base surrounding its efficacy as a treatment approach, PRN medication administration may simply provide pharmaceutical restraint, rather than improved management and treatment. There is an urgent need to develop relevant psychotropic "as needed" medication educational materials that can be easily accessed by mental health nurses. The study is clearly important to mental health practice. Dissemination of the results to mental health nurses will be an important outcome of the study. It will also be important to include studies such as this in education programs for undergraduate nurses and other health professionals and of course that links into the necessity for better training of nurses in psychopharmacology.

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