



# **How to Reduce Unnecessary Use of Antipsychotics in the Elderly**

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<p>Abstract:</p> <p>This narrative literature review briefly explores antipsychotic misuse in the elderly in a global context. Eleven articles that present interventions with the potential to reduce antipsychotic misuse are included in the sample. By using conductive analysis this study aims to help in identifying how a successful reduction of antipsychotic medication can take place.</p> <p>The research includes a pharmacological profile of antipsychotic medications, and some common issues when caring for the elderly. Antipsychotics can be used to induce chemical restraint and this study focuses strongly on the misuse of antipsychotics in that context. Inappropriate use of antipsychotics to induce chemical restraint is a human rights issue. The theoretical framework is based on the ethical principles of the rational use of medicines and the swiss cheese model by James Reason to augment contextualization.</p> <p>This study found that the contextualization of antipsychotic misuse is essential for successfully reducing inappropriate prescribing. Successful intervention types include educational interventions and interventions that enhanced reporting.</p>	
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# 1 INTRODUCTION

Antipsychotic misuse in the elderly may occur for a variety of reasons.

This research focuses on inappropriate chemical restraint through antipsychotic misuse. While antipsychotic misuse is always an issue of patient safety and quality care, inappropriate chemical restraint is also a human rights issue. This issue is especially common in patients that are suffering from dementia. (WHO 2019) Dementia may cause challenging behaviors in patients. Oftentimes these behaviors are controlled by using drugs such as antipsychotics and sedating the patient. (Kales et al. 2014, Ijaopo 2017)

This is an unethical practice because the patient's underlying condition is not properly addressed. (Dingwall 2007b)

High rates of dependence and disability of patients that are suffering from dementia lead to a high number of caring relationships between patients that are suffering from dementia and healthcare professionals. Nurses commonly have more direct contact with patients than other groups of healthcare professionals. For this reason, addressing challenging behaviors in patients that are suffering from dementia is a nursing issue.

Nurses bear responsibility for the patient's wellbeing and for monitoring and documenting their patients. This extends to the monitoring and documenting of pharmacological aspects of the patient's treatment.

Antipsychotic medications can cause many side effects. These include an increased risk of falling in the elderly, weight gain, a higher risk of getting diabetes and constipation, which may lead to additional prescribing of laxatives and increase polypharmacy. Some antipsychotics can also cause fainting, and neuroleptic malignant syndrome, which is a life-threatening condition. (Berman 2011, Lynch et al. 2012, Rethink.org 2014, De Vreese et al. 2018)

Aging causes a change of effectiveness of sedative drugs such as antipsychotics and this can be assumed to be one reason for a general trend of over-sedation that leads to chemical restraint in the elderly. The Elderly are especially vulnerable to some of the side effects caused by antipsychotics and their care requires lower dosages and careful monitoring. (Dingwall 2007a, Dingwall 2007b)

This research is aimed at exploring the topic of antipsychotic misuse and contextualizing it with the aim to help in identifying successful ways to reduce antipsychotic misuse.

Firstly, the reader is presented with some basic information on the pharmacological properties of antipsychotic agents. After this, the use of chemical restraint to control challenging behaviors is discussed. Ethical perspectives on the rational use of medicine and complexities in the health care system are included. This is followed by a narrative literature review that categorizes and discusses eleven intervention studies with the potential to reduce antipsychotic misuse.

## 2 BACKGROUND

Pharmacological treatment is generally done within a multidisciplinary team. Every part of this team is required to know about the pharmacological properties of medications. Nurses are typically the ones that dispense and document the use of medications. Clinical knowledge is needed to bear responsibility for ensuring that the patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time. (WHO 1989, Heinemann et al. 2016, Rassool 2005) This chapter includes a pharmacological profile that explains the properties of antipsychotic drugs in detail. While this chapter discusses the general side effects of antipsychotics that have been documented, it does not include information on individual antipsychotic agents and their properties. Some antipsychotics may cause side effects that are not included in this chapter. There is also always a risk of pharmacological interactions with other drugs.

It is not enough for nurses to know about the drugs they administer.

When caring for elderly patients, nurses need to be aware of the physiological changes that may affect the pharmacological effectiveness of drugs. (Dingwall 2007a)

Age-related diseases, such as dementia may cause behaviors that are challenging to the nursing staff. (Kales et al. 2014) This is a common reason for antipsychotic misuse because antipsychotic drugs can be used to control challenging behaviors rather than addressing the cause of such behavior. (Dingwall 2007b)

Dementia is one of the most common causes of disability and dependency in the Elderly. (WHO 2019)

Nurses have an essential role in ensuring high-quality dementia care. They need to be aware of how to administer high-quality dementia care so that they can assess the need for antipsychotic drugs continuously. High-quality dementia care includes non-pharmacological approaches to challenging behaviors.

Nurses are in a position to not only apply non-pharmacological treatments to patients who suffer from dementia but also to educate the patient and the patient's relatives on how to deal with the challenging behaviors that may coincide with dementia.

## 2.1 Pharmacological Profile

Antipsychotic agents can be classified as typical (First-Generation) or atypical (Second-Generation). Atypical antipsychotics have properties, which typical antipsychotics do not possess: 5HT<sub>2A</sub> antagonism, fast dissociation from D<sub>2</sub> receptors and 5-HT<sub>1A</sub> agonism. 5HT<sub>1A</sub> agonism increases dopamine release in the prefrontal cortex and reduces glutamate release. (Guzman 2018)

5HT<sub>2A</sub> antagonism antagonizes the functioning of the neurotransmitter serotonin. (Mauri et al. 2014)

Antipsychotic effects can be achieved through either dopamine antagonism or partial agonism. Apart from dopamine receptors, antipsychotics also interact with a number of other receptors. Multiple clinical and adverse effects of different antipsychotics are related to the combination of receptors occupied by the agent.

There are 5 different types of dopamine receptors in the brain: D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>, D<sub>4</sub>, D<sub>5</sub>.

The antipsychotic effect of typical antipsychotics is directly related to the level of D<sub>2</sub> receptor blockade they cause. However, the level of D<sub>2</sub> receptor blockade is not directly related to the antipsychotic effect of atypical antipsychotics. All antipsychotics interact with the D<sub>2</sub> receptor, therefore it is assumed that the effect of antipsychotic drugs on the D<sub>2</sub> receptor is primarily responsible for the antipsychotic properties of the drugs.

(Mauri et al. 2014, Guzman 2018)

It is assumed that typical antipsychotics bind more tightly to the D<sub>2</sub> receptors, while atypical antipsychotics bind to it more loosely. Atypical antipsychotics dissociate more easily from D<sub>2</sub> receptors (fast dissociation), which helps allow normal Dopamine Transmission. For this reason, atypical antipsychotics that are administered in dosages within the clinically effective range do not cause some of the side effects which typical antipsychotics can cause.

(Seeman 2002)

Extrapyramidal side effects may be caused by dopamine depletion and include symptoms similar to those caused by Parkinson-disease. (Blair et al. 1992)

Typical antipsychotics may cause extrapyramidal symptoms (EPS), hyperprolactinemia (high levels of prolactin in the blood, can lead to sexual side effects), tardive dyskinesia

(a disorder causing involuntary movement) and possibly neuroleptic malignant syndrome. Even though these symptoms are generally associated with high doses, they can sometimes also occur at doses within the clinically effective range. (Mauri et al. 2014, Rethink.org 2014)

The neuroleptic malignant syndrome is a life-threatening reaction that may occur in reaction to all antipsychotic drugs, including newer atypical antipsychotics. It is characterized by fever, altered mental status, muscle rigidity, and dysfunction of the autonomic nervous system. (Berman 2011)

All antipsychotic medication can cause a multitude of side effects. These include also sleepiness, slowness and blurred vision (which may increase fall risk in elderly), weight gain, a higher risk of getting diabetes and constipation (which may lead to additional prescribing of laxatives). Some antipsychotics can also influence the cardiovascular system, causing hypotension and therefore dizziness and fainting. (Lynch et al. 2012, Rethink.org 2014, De Vreese et al. 2018)

## **2.2 Medication Issues for older people**

### **Age-related physiologic changes**

Both Pharmacokinetics (what the body does to the drug) and Pharmacodynamics (what the drug does to the body) can be affected by the aging process. Aging can affect the Distribution, Absorption, Metabolism, and Excretion of Medication as well as the Sensitivity towards Medication. Age-related changes to tissue sensitivity can change the impact of a drug in its metabolized state when it reaches the site of action. (Dingwall 2007a, Lin 2004)

Age-related physiological changes can result in oversensitivity or overreaction to sedative drugs. Older people may be more sensitive to psychotropic medication (such as antipsychotics) which can lead to dangerous side effects such as excessive drowsiness which will increase the risk of falls, incontinence, and infection. These risks make it especially important for the adverse effects and toxicity of antipsychotics to be monitored. The frequency of prescribed doses may have to be reduced due to the longer half-life due to physiologic changes in older people. (Dingwall 2007b)

The physiological changes that affect pharmacokinetics and pharmacodynamics in the elderly need to be considered when prescribing, administering and monitoring the patients. Both doctors and nurses need to keep the variability of the therapeutic window in mind. The change of effectiveness of sedative drugs caused by aging can be assumed to be one reason for the general trend of over-sedation that leads to chemical restraint in the elderly. (Dingwall 2007a)

Lower dosage and careful monitoring are vital in the care of elderly patients. Objective rather than subjective observations are important and medication should not be altered or increased, just because it appears to have been ineffective on a short term basis (Dingwall 2007b)

## **Neuropsychiatric impairments in patients with dementia**

According to the World Health Organization, there are around 50 million people who have dementia worldwide. Approximately 5-8% of the general population that is 60 years old and older are suffering from dementia. In 2030, the total number of people with dementia is expected to reach 82 million, and in 2050 it is expected to reach 152 million. The World Health Organization considers dementia one of the major causes of disability and dependency in the Elderly worldwide. Symptoms of dementia can include a deterioration in memory, changes in thinking, behavior and the ability to perform everyday activities. Dementia can be categorized into three stages: Early stage, middle stage, and late stage. While the early stage of dementia is often overlooked, patients in the late stage of dementia are completely dependent and inactive. Currently, there is no treatment that can cure dementia or change its progressive course. (WHO 2019)

Inappropriate behaviors commonly occur in people suffering from dementia. They pose emotional and financial challenges. (Cohen-Mansfield 2001, WHO 2019)

The neuropsychiatric symptoms of dementia that coincide with inappropriate behavior include aggression, agitation, depression, anxiety, delusions, hallucinations, apathy, and disinhibition. Symptoms like these affect dementia patients all around the globe across different dementia stages. Notably, Neuropsychiatric symptoms of this sort are associated with poor patient outcomes like increased morbidity and mortality, increased use of health care, and earlier placement in nursing homes. In the caregiver, neuropsychiatric symptoms of the patients are associated with increased stress, depression and reduced employment. (Kales et al. 2014)

Psychotropic medications (including antipsychotics) are often used to manage neuropsychiatric symptoms. Non-pharmacologic treatments, which should be considered first-line treatments, are not taken up adequately. (Kales et al. 2014, Ijaopo 2017)

Nonpharmacological treatments may e.g. aim at meeting the unmet needs of people with dementia. The needs of people with dementia may often be overlooked due to a decreased ability to communicate and a disability to provide for oneself. One study in the United States found boredom/sensory deprivation, loneliness/need for social interaction, and the need for meaningful activity to be prevalent unmet needs. (Sample size: 89) The authors also estimated that pain and discomfort were notably under-reported in people with dementia. (Cohen-Mansfield et al. 2015)

According to Dementia Care Practice Recommendations person-centered care is essential to good dementia care. Person-centered care is a philosophy of care. The same philosophy may also be called “person-directed”, “resident-focused” or something similar.

This philosophy is built around the needs of the individual patient and relies on knowing the person through an interpersonal relationship.

Person-centered care differs from the traditional medical model of care because it does not focus on processes, schedules, and staff and organizational needs. Person-centered care requires commitment from all members of the organization, and especially from leaders and management positions. (Fazio et al. 2018)

The core values of person-centered care have been categorized differently by different authors. One such categorization was done by Levy-Storms in 2013:

“1. Every person has his/her own meaning of life, authenticity (personality, spirit, and character), history, interests, personal preferences, and needs to continue to experience life at all stages of dementia. The person is not their dementia illness; rather the condition is only one aspect of their current status. 2. Focus on the strengths of the person living with dementia rather than on what abilities and capabilities have been diminished or lost. 3. "Enter the world" of the person living with dementia to best understand, communicate with, and interpret the meaning of his/her behavioral expressions from their perspective.” (Levy-Storms 2013)

### **Chemical restraint**

Chemical restraint is the use of medicines to control the patient's behavior rather than treating the patient's condition. (Dingwall 2007b)

The process of prescribing is essential for distinguishing between chemical restraint and treatment. Medicines that are prescribed after assessment and as part of a rational plan of care are used as a treatment for the patient's condition. On the other hand, medicines that are prescribed as a reaction to the patient's behavior are used to restrain the patient chemically. (Currier et al. 2000)

According to the General principles from the UK for using chemical restraint, the sedative medication can only be administered under specific circumstances:

The medication is administered to facilitate optimal care of the patient only after the use of appropriate assessment and monitoring tools. The sedative is given because the patient, other patients or the clinical staff are placed at risk of harm and non-pharmacological

strategies have been found ineffective. The decision to administer a strong sedative to chemically restrain a patient was made in a multi-disciplinary team (that must include either the patient or a proxy)

Once it has been decided that chemical restraint will be used to handle a patient, this decision needs to be documented and re-evaluated continuously. Chemical restraint should only be used in the best interests of your patients. It should never be used to compensate for inadequate human or environmental resources. One example of a situation where chemical restraint may be used to compensate for a lack of resources are wards with a low staffing level. (Dingwall 2007b)

### **3 THEORETICAL FRAMEWORK**

The theoretical framework explains the Rational Use of Medicine in accordance with the World Health Organization, the Swiss Cheese model by James Reason, and Human error also from James Reason's perspective. The framework is meant to provide tools for contextualizing complex healthcare systems in a way that can help to address antipsychotic misuse.

#### **3.1 Rational Use of Medicines**

In 1989 WHO (The World Health Organization) stated that the rational use of drugs entails that the patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, and at the lowest cost to them and their community. In the same document, WHO stated that rational use may be achieved by a systems approach that is adopted by all members of the health care team and also the patient. (WHO 1989)

The criteria set by the World Health Organization in 1989 can still be useful in distinguishing between the rational use of medicines and inappropriate or irrational prescribing. Even though this is not mentioned in the definition, it is clear that methods alternative or complementary to the use of medicine should also be considered to be part of the patient's treatment. (Rassool 2005)

In 2002, WHO suggested 12 ways to promote the rational use of drugs, these included: Medicine use policies should be coordinated by a mandated multi-disciplinary national body. Countries that organize their health care systems conscientiously can be assumed to be more successful at promoting the rational use of medicines. To ensure that healthcare professionals hold up to the standards set by clinical guidelines, supervision, audit, and feedback can be used. Appropriate and enforced regulation is considered to be a good way to promote rational drug use. Governments also need to support their health care system sufficiently so that the availability of medicines and staff is ensured.

Countries need to avoid perverse financial incentives in the context of drug use.

Drugs and therapeutics committees in districts and hospitals can provide additional support to healthcare professionals and ease the processes associated with a rational use of medicine.

Clinical guidelines promote the rational use of medicines because healthcare professionals can use them to educate themselves and to have a standard for professional development. Before graduating, healthcare professionals should also train problem-based pharmacotherapy as part of their undergraduate curricula. Medical education of healthcare professionals should not stop after they graduate but instead continue in-service and this should be a requirement for practicing in their profession. Independent information on medicines should be available and should be used continuously. Education of health care professionals should extend to an education of the public.

### **3.2 The Swiss Cheese model by James Reason**

Health care systems have many defensive layers: some are engineered (alarms, physical barriers, automatic shutdowns, etc), others rely on people (surgeons, anesthetists, nurses, etc), and yet others depend on procedures and administrative controls.

The function of these defensive layers is to promote patient safety and prevent adverse events. While defensive layers may prevent many adverse events, they also have weaknesses. Similarly to Swiss Cheese, the overlapping defensive layers have holes. Unlike in the cheese, the holes are continually opening, shutting, and shifting their location. A bad outcome or adverse event only takes place if the holes in many layers shift to the same place at the same time.

Active failures are unsafe acts committed by for example nurses who are in direct contact with the patient.

Latent conditions are the inevitable flaws that were made by for example management personnel who took an active role in designing the defensive layers.

Latent conditions can have two kinds of adverse effect:

1. They can be error provoking conditions within the local workplace (Examples: time pressure, understaffing, inadequate equipment, Fatigue, and inexperience, etc.)
2. They can be long-lasting holes or weaknesses in the defensive layers (Examples: untrustworthy alarms and indicators, unworkable Procedures, design and construction deficiencies, etc.).

Latent conditions may be present within the system for many years before they

Combine with active failures and local triggers to create an accident opportunity.

Active failures are often hard to foresee, latent conditions, however, can be sought after and identified and remedied before they become an attributing factor to the occurrence of an adverse event.

(Reason 2000)

Because of the common over-prescription of antipsychotic medication in the treatment of the elderly, it can be assumed that there are many latent defensive layers, that are currently flawed and do not promote patient safety ideally.

### **3.2.1 Nurses within a complex healthcare system**

Often there are several layers through which the prescribing and administration of medications happen. Nurses, in most settings, are functioning as the last protective layer through which the medication administration is controlled. (Bergqvist 2010)

While doctors are responsible for diagnosis and treatment (i.e. prescription of drugs), nurses dispense and document the use of medications. The decision of when to administer a drug is generally left to the nurse. (Heinemann et al. 2016)

Nurses that work in nursing homes have a responsibility to observe the patient's reaction to the drug. If a patient is suffering from chemical restraint that is caused by antipsychotics, it is the nurse's responsibility to document this.

Health care professionals, such as nurses, have a responsibility to ensure the rational use of prescribed psychoactive medicines, such as antipsychotics. The promotion of and education in the rational use of psychoactive substances, such as antipsychotics, are part of the nursing role (Rassool 2005)

Nurses must recognize their responsibilities within the multidisciplinary team that relates to the safe administration of medicines. As a result, adverse reactions to antipsychotic drugs such as tiredness, weakness, and falls will be noticed more often. It is the role of the nurse to challenge poor prescribing and drug administration practices. Because of the increasing number of older people being prescribed medication, it is vital that registered nurses recognize the need to increase understanding and knowledge of drug therapy.

(Dingwall 2007a) It is a challenge facing registered nurses to consider the impact of their decision making and practice on the wellbeing of older people. (Dingwall 2007b)

It is worth noting that even though registered nurses should recognize their responsibilities that relate to the safe administration of medicines, other health care professionals should and need to also take part in reducing unnecessary prescribing of antipsychotics in the elderly.

Studies found that a medication review, of the medications, that elderly patients receive, by a pharmacist results in more appropriate prescribing, including discontinuing drugs no longer required or contraindicated. (Tulip et al. 2002, Furniss et al. 2000)

### **3.3 Human error**

There are many different ways to think about or approach human errors. Psychologist James Reason described 2 different approaches in an article that was published in the year 2000: The person approach and the system approach.

**The person approach** focuses on the errors of individuals. It views these errors as arising primarily from aberrant mental processes and followers of this approach tend to treat human errors as a moral issue. Countermeasures to human errors according to the person approach include disciplinary measures, the threat of litigation, retraining, naming, blaming, and shaming.

**The system approach** focuses on minimizing the risk of human errors occurring by creating a better work environment. The basic premise is that humans are fallible. Errors are seen as consequences rather than causes, originating from latent conditions on an organizational level.

(Reason 2000)

### **Error reporting and Documentation**

If too many or all of the team members take a person approach to human errors, trust can not be established in the way that it needs to be to encourage error reporting. Trust-based leader-membership interactions help build a culture of error reporting. (Kim: 2014)

Error reporting is crucial for noticing flaws in the latent conditions of the work environment and to correct the underlying conditions that increase the likelihood of adverse events. The unnecessary oversedation of a patient is one example of a reoccurring adverse event.

A culture of error reporting is linked to higher satisfaction of patients. (Doherty 2008)

A study done by the Health and Human Services Office of Inspector General in 2002 evaluated the use of psychotropic drugs in nursing homes.

For 7% of residents, the appropriateness of psychotropic drug use could not be determined due to insufficient documentation in the medical record.

8% of the residents whose records were examined, had received psychotropic drugs in the following inappropriate ways: inappropriate dosage, unjustified chronic use, lack of documented benefit to the resident, a wrong drug administered, and unnecessary duplication of drug therapy. (Young 2002)

All of the ways in which psychotropic drugs were inappropriately used in this study could have been noticed by an educated registered nurse who was documenting and monitoring her patients.

## 4 AIMS AND RESEARCH QUESTIONS

The author aimed to address antipsychotic misuse in a sensible manner to try and identify ways to reduce antipsychotic misuse successfully and simultaneously promote the rational use of medicine.

This study about the misuse of antipsychotic drugs focuses on the following research question: How can the unnecessary use of antipsychotics in elderly patients be reduced successfully and rationally?

The Question will be answered by comparing different interventions that have been done or could be implemented as part of elderly care and that would result in a reduction of the unnecessary use of antipsychotics

## 5 METHODOLOGY

This study is a narrative literature review that uses conductive data Analysis to review literature. In this chapter, the researcher explains the process of conducting this research in more detail.

Firstly, this chapter explains how the sample was acquired and also includes the actual sample. Secondly, the inclusion and exclusion criteria for the sample are listed. Thirdly, this chapter outlines the Method of Data Analysis used in the results chapter. Fourthly, Ethical considerations are described in more detail.

Conclusively, this chapter outlines the main components that grant validity to this study.

## 5.1 Data Collection

For the writing of this thesis, the researcher conducted several searches. The first search was conducted using the Arcada Database: Academic Search Elite (Ebsco):

In February 2019 the researcher entered the Boolean Search terms

"(Nursing OR nurse OR nurses ) AND ( antipsychotics or antipsychotic medication or antipsychotic drug )" and searched the Academic Search Elite (EBSCO) database. Filters were added to only include peer-reviewed articles from scientific Journals that were fully accessible online and were published between the years 2008 – 2019 in the English language. The search resulted in 165 hits. The researcher scanned 165 articles for significance to the research. 72 articles were potentially relevant to this study. These 72 articles were recognized as potentially relevant because they discussed issues related to antipsychotic use. The process of scanning these 72 articles for the second time helped to gain perspective for the structuring of this Thesis. The decision to focus on interventions/programs targeted at elderly patients was done after scanning these articles. Documentations of interventions and programs that aim to reduce antipsychotic prescribing offer a practical perspective on the research question. This is appropriate because the research question is of a practical nature.

Out of the 72 articles, only 11 studies were chosen to be part of the results chapter, because they documented Interventions or Programs. The other 61 articles did not fit the inclusion and exclusion criteria that are explained in the previous chapter.

The researcher did not have the resources (time) to include more than 11 articles into the research. 11 articles were found already during the first search, which is why only these were included in the actual literature review. Articles that were found during other searches and that were of similar significance to answering the research question will be shortly discussed in the Discussion Chapter.

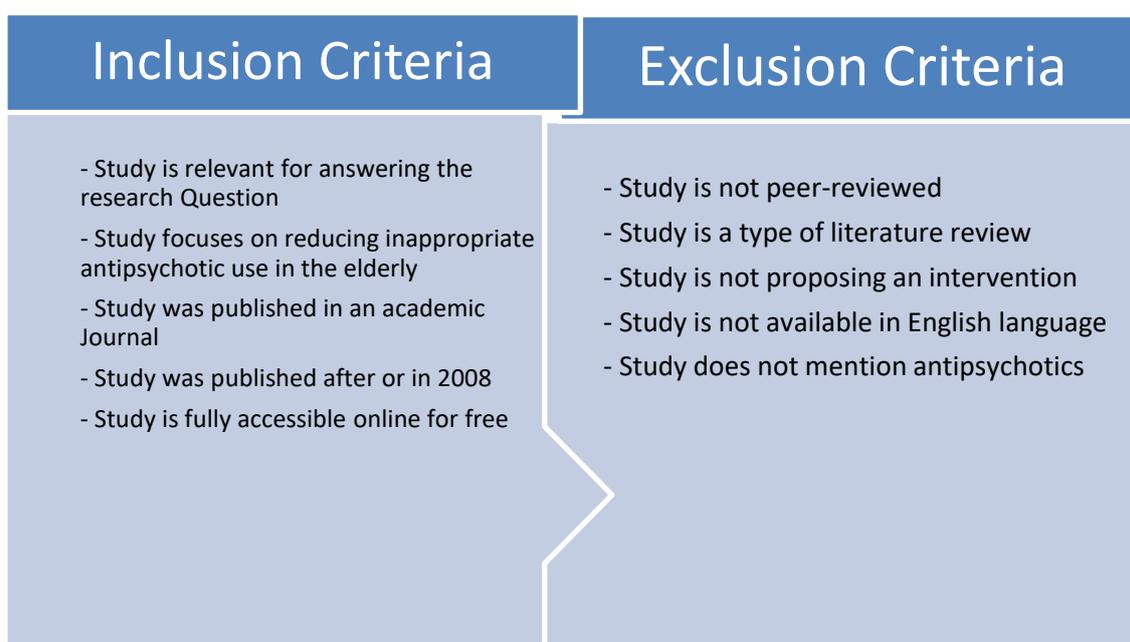
**The following Sample will be analyzed in the Results Chapter:**

1. Azermai, M., Petrovic, M., Engelborghs, S., Elseviers, M., Van der Mussele, S., Debruyne, H., Van Bortel, L. and Stichele, R. (2013). *The effects of abrupt antipsychotic discontinuation in cognitively impaired older persons: A pilot study*. *Aging & Mental Health*, 17(1), pp.125-132.
2. Ballard, C., Corbett, A., Orrell, M., Williams, G., Moniz-Cook, E., Romeo, R., Woods, B., Garrod, L., Testad, I., Woodward-Carlton, B., Wenborn, J., Knapp, M. and Fossey, J. (2018). *Impact of person-centred care training and person-centred activities on quality of life, agitation, and antipsychotic use in people with dementia living in nursing homes: A cluster-randomised controlled trial*. *PLOS Medicine*, 15(2)
3. Bowblis, J., Lucas, J. and Brunt, C. (2015). *The Effects of Antipsychotic Quality Reporting on Antipsychotic and Psychoactive Medication Use*. *Health Services Research*, 50(4), pp.1069-1087.
4. Brooker, D., Latham, I., Evans, S., Jacobson, N., Perry, W., Bray, J., Ballard, C., Fossey, J. and Pickett, J. (2016). *FITS into practice: translating research into practice in reducing the use of anti-psychotic medication for people with dementia living in care homes*. *Aging & Mental Health*, 20(7), pp.709-718.
5. Chenoweth, L., Jessop, T., Harrison, F., Cations, M., Cook, J. and Brodaty, H. (2018). *Critical Contextual Elements in Facilitating and Achieving Success with a Person-Centred Care Intervention to Support Antipsychotic older residents in assisted living facilities: study protocol for a randomized controlled trial*. *Trials*, 13:85
6. Elliot, R. and Adams, J. (2012). *Using a practice development project to improve standards of care for people with dementia*. *Nursing Older People*, 24(8), pp.28-31.
7. Fog, A., Kvalvaag, G., Engedal, K. and Straand, J. (2017). *Drug-related problems and changes in drug utilization after medication reviews in nursing homes in Oslo, Norway*. *Scandinavian Journal of Primary Health Care*, 35(4), pp.329-335.
8. Gorski, S., Piotrowicz, K., Rewiuk, K., Halicka, M., Kalwak, W., Rybak, P. and Grodzicki, T. (2017). *Nonpharmacological Interventions Targeted at Delirium Risk Factors, Delivered by Trained Volunteers (Medical and Psychology Students), Reduced Need for Antipsychotic Medications and the Length of Hospital Stay in Aged Patients Admitted to an Acute Internal Medicine Ward: Pilot Study*. *BioMed Research International*, 2017, pp.1-8.
9. Jordan, S., Gabe-Walters, M., Watkins, A., Humphreys, I., Newson, L., Snelgrove, S. and Dennis, M. (2015). *Nurse-Led Medicines' Monitoring for Patients with Dementia in Care Homes: A Pragmatic Cohort Stepped Wedge Cluster Randomised Trial*. *PLOS ONE*, 10(10)
10. Lenander, C., Bondesson, Å., Viberg, N., Beckman, A. and Midlöv, P. (2018). *Effects of medication reviews on use of potentially inappropriate medications in*

*elderly patients; a cross-sectional study in Swedish primary care.* BMC Health Services Research, 18(1).

11. Zwijsen, S., Smalbrugge, M., Zuidema, S., Koopmans, R., Bosmans, J., van Tulder, M., Eefsting, J., Gerritsen, D. and Pot, A. (2011). *Grip on challenging behaviour: a multidisciplinary care programme for managing behavioural problems in nursing home residents with dementia. Study protocol.* BMC Health Services Research, 11(1).

## 5.2 Inclusion and Exclusion criteria for Results Chapter:



The main aim of this study is to answer the research question, thus the sample consists only of studies that contribute to answering the research question. Studies that did not mention antipsychotics or did not focus on reducing inappropriate antipsychotic use in the elderly were not included.

To ensure that the sample only contains relevant studies that are up-to-date with the current state of research, the researcher only included articles that were published after or in the year 2008. To ensure that the studies included in the sample are of high quality, only peer-reviewed articles that had been published in a scientific journal were included. Because of limited resources (time) available to this research, studies that did not propose an intervention were not included in the sample. Only studies that were fully accessible online for free and in the English language were included.

### 5.3 Data Analysis

This study is a narrative literature using inductive Content Analyses.

Content Analysis examines not just manifest, but also latent meaning within the text. (Ward 2015)

This study applies both quantitative and qualitative methods by using some word counts and integrating them into an otherwise qualitative review.

Mixed methods studies are preferred to single methods studies. (Ward 2015)

This study identifies trends and key themes relating to the research topic. Key themes are named and are one of the main things shaping this research. Equally important for shaping this research is the research aim. (White et al. 2006)

The coding scheme, consisting of keywords relating to key themes, is developed from the data and is not an a priori scheme. (Zhang et al. 2009, White et al. 2006)

Even though a word count is integrated into this study, the main tool for identifying the key themes and keywords in the sample is the researcher. (White et al. 2006)

This research will compare each text assigned to a category with each of those assigned to the same category with the aim of fully understanding the entailments of each analyzed category. (Zhang et al. 2009)

To analyze the data, the author read the articles in the sample repeatedly. While reading through the articles, the researcher took notes and collected ideas for possible key themes. After this, the author wrote structured summaries of each article.

To find sensible key themes, the author also conducted a word count in which every word of every article was included using Wordcounter.net. The word count is documented in the Appendix.

The author reflected on keywords that the authors of each article had identified and also on words that were most commonly used in each text. Words such as patient/s, care staff, training, nursing home/s, drug-related problems were commonly mentioned in the text.

The word count helped the author in identifying key themes that are summed up in the sub-chapter of the results chapter that focuses on Contextualization.

The sample was categorized by the author into different types of interventions with the aim of answering the research question: Educational interventions, Reporting interventions, and Other interventions.

The categorization is summed up in the findings chapter and can also be found in a table in the appendix.

After reflecting on the material presented in the sample, the author decided to dedicate a chapter in the Findings chapter to explore Contextualization in the interventions that were included in the sample. Contextualization was recognized as a key factor for successful interventions.

## The different steps of Data Analysis

1. Scanning through the EBSCO Arcada data basis	The author read through the abstracts of many different articles to get an overview of available material.
2. Reading and re-reading the sample	The author read each article in the sample several times and took notes. Several suggestions for key themes were included in these notes.
3. Writing structured summaries of each article	<p>The author wrote a summary of each article in the sample using the following structural framework:</p> <ul style="list-style-type: none"> <li>Name of study</li> <li>Name of authors</li> <li>Year published</li> <li>Country of conduction</li> <li>Antipsychotics decreased</li> <li>Other effects monitored (and tools used)</li> <li>Study Design</li> <li>Sample Size (and type)</li> <li>Strengths according to study</li> <li>Limitations according to study</li> </ul>
4. Conducting a word-count	<p>The author copied the entire text of each article into a word-counting software and documented the words that were most commonly used. (see Appendix)</p> <p>The author also documented the keywords that were given by the authors of the sample articles themselves.</p>
5. Identifying key themes	<p>After collecting information from the notes that were previously taken while reading the texts, the structured summaries, the word count and the keywords according to the authors of the sample, the researcher decided on key themes that were sensible to the issue at hand. The process of deciding on the key themes was reflective of all of the knowledge that had been acquired through each step of the Data Analysis.</p> <p>The main headings of the Findings chapter were taken from the notes that the author had taken while re-reading the sample.</p>

## 5.4 Ethical Considerations

When considering the Ethics regarding this study, the researcher used the article: “Good scientific practice and procedures for handling misconduct and fraud in science” published by the Finnish National Board on Research Ethics (TENK) in 2002.

Arcada has committed itself to the practice guidelines of the Finnish National Board on Research Ethics.

This study conforms to good scientific practice, which entails that the research is relevant, the researcher has no conflict of interest to declare, the sample consists of high-quality studies and the research is done meticulously and critically evaluated continuously.

By conforming to good scientific practice, this study seeks to create reliable new knowledge. The Data Analyses especially was done conscientiously in order to ensure the creation of new knowledge

To ensure relevant research, this study is focusing on a relevant research question. Because this is nursing research, the relevance of the study is based on a nursing principle: to promote patient safety. This study seeks to identify effective ways of decreasing the inappropriate use of antipsychotic drugs.

Authenticity and Integrity, as well as meticulousness and critical thinking, are maintained throughout the whole study.

This means this study does not falsify or fabricate information. The integrity of the articles included in the literature review is maintained at all times, meaning that the objective results of these studies have neither been changed nor ignored (if relevant). Studies that are included in the literature review have been collected carefully and meticulously. All Studies that are reviewed in the Results Chapter entail good scientific practice.

All Sources used in the writing of this document are included so that the researchers whose work is used in this study are given due account and their work is respected.

To prove the validity of this study, all essential searches conducted are documented in the Methodology Chapter.

(TENK 2002)

Criteria that are oftentimes used to assess the quality of research and that are based on tradition are not suitable for evaluating the quality of qualitative and interpretive research. (Lincoln et al. 1981, Bradley 1993)

Because this study is qualitative and interpretive, the following criteria for evaluating this study were observed during the writing process continuously: Credibility, Dependability, Confirmability, and Transferability. (Lincoln et al. 1981, Bradley 1993, Zhang et al. 2009, Ward 2015)

Credibility means that the data gathered accurately reflects the research question.

Dependability ensures that the study could be replicated and the results would be similar, meaning the study is confirmable. Transferability means the results of this study should be applicable somewhere else. (Lincoln et al. 1981, White et al. 2006)

## 6 FINDINGS

The sample is categorized into different intervention types, each article is assigned to one category. After this, the author explores the topic of contextualization from the perspective that has been gained by reading through the articles.

### 6.1 Systematically performed discontinuation efforts - Intervention Types

Each article that is included in the sample proposes an intervention that might hold the potential to reduce antipsychotic use. The researcher categorized all interventions into three categories: Educational interventions, Interventions that utilize reporting, and other types of intervention that did not fit the first 2 categories. The appendix includes a table where the categorization of each article is summed up.

The articles as mentioned beneath each sub-heading of this chapter are ordered by the date in which they were published.

Even though some data on the reduction of antipsychotics as a result of the interventions is included, the overall effectiveness of each intervention and also each intervention type is not to be generalized without contextualization.

#### **Education (articles 6, 4, 2, and 5)**

A study in the UK in 2012 employed a multidisciplinary Nursing Home specialist training and education team. The team offered education and training to staff in the care home sector who are caring for elderly people with dementia. The Training was based on person-centered dementia care.

Core training sessions were offered to a group of staff members, and after that 2 champions could be selected for focused sessions. The champions then passed on their training to other staff members. The intervention did not measure antipsychotic use due to limitations in time. (Elliot et al. 2012)

The “Focused Intervention Training and Support” intervention in the UK used Dementia Practice Development Coaches to educate designated care staff members to become Dementia Care Coaches. The education provided included person-centered care. The Dementia Care Coaches were then responsible for implementing the intervention in 1 or 2

care homes. This intervention caused a 31% reduction in antipsychotic prescriptions. (Brooker et al. 2016)

The WHELD intervention was implemented between 1. January 2013 and 30 September 2015 in the UK. A research therapist educated and trained staff members in nursing homes in person-centred care and antipsychotic medications amongst other things. The staff that had been educated was expected to implement changes and pass on knowledge after the training. No antipsychotic reduction was achieved. The intervention did not initiate directly for changes in antipsychotic medication to be made but instead relied on bettering processes in the care homes with the aim to trigger necessary medication reviews. The baseline level of antipsychotic use was low. (Ballard et al. 2018)

In Australia, a train-the-trainer approach was used in the HALT (Halting Antipsychotic Use in Long-term care) study. The training was spread from a dementia Nurse specialist to 22 Nurse champions, 135 direct care staff, visiting practitioners and pharmacists. The impact that this intervention had on antipsychotic use was not measured quantitatively, but Nurse champions recorded that person-centered approaches learned in the intervention helped care staff to respond proactively to resident behaviors without using antipsychotics. (Chenoweth et al. 2018)

### **Reporting (articles 11, 1, 3, and 9)**

In 2011, Zwijsen and others published a paper that documented an intervention that was to be studied in the Netherlands. This intervention is based on 4 steps, the first of which is nurse reporting. Nurse reporting in this intervention is not only essential to recognizing problems but also to recognize the effectiveness of potential solutions. The intervention assists nurse reporting by introducing a screening tool for behavioral problems. After recognizing the problem, an analysis is conducted. Treatment options are decided in multi-disciplinary team meetings that are pre-arranged as part of the intervention. The programme might be useful because it fits with daily practice and suggests ways to integrate new working methods in the care-process. The effect on antipsychotic use is to be measured. (Zwijsen et al. 2011)

In a pilot study performed in Belgium physicians and nurses in a hospital setting were asked to report to the principal investigator when patients on antipsychotics were admitted. The patients were then further screened by the researcher. Informed consent was collected from eligible patients and/or their proxy, before asking the treating physician to

give the order to abruptly cease antipsychotic treatment. Antipsychotic use was successfully ended in 31 patients. (Azermai et al. 2013)

A public reporting initiative in 2012 in the US led to a measurable decrease of antipsychotic use in those facilities that were subject to reporting. Antipsychotic use was decreased at a slower rate in those facilities that were not reporting and it is unclear whether the public reporting initiative had a measurable impact in the long run. It is also unsure whether facilities were substituting antipsychotics with other drugs as a consequence of the public reporting initiative. (Bowblis et al. 2015)

During an intervention in the UK in 2015 nurses used the West Wales Adverse Drug Reaction Profile for monitoring Mental Health Medicines in patients. This Profile aims to alleviate the under-reporting of drug-related problems. Reductions in antipsychotic use due to the profile in this intervention were minor. (Jordan et al. 2015)

### **Other (articles 8 and 10)**

A study in Poland in 2017 employed Medical and Psychology students to deliver a multicomponent standardized intervention targeted at delirium risk factors. This study was conducted in an internal medicine ward but included only elderly people. The medical and psychology students provided the intervention for the first five days of treatment in the hospital, visiting each patient for one hour every day during this time.

The intervention successfully reduced the initiation of antipsychotic drugs in the intervention group. The initiation of antipsychotic drugs in the intervention group was 16,9% compared to 32,3% in the control group. (Gorski et al. 2017)

An intervention in Norway employed Medication Reviews to successfully reduce antipsychotic use in Nursing homes by 1,5%. The Medication Reviews were done by a Nursing Home physician and a registered nurse employed at the unit, with the help of an externally hired clinical pharmacist. All team members also received training sessions before projects start. (Fog et al. 2017)

Medication Reviews were conducted 2011–2012 in Swedish primary care by trained clinical pharmacists. After the medication reviews were conducted, discussions in multidisciplinary with general practitioners and nurses were held. The Intervention reduced antipsychotic use successfully from 194 patients using antipsychotics to 136. (Lenander et al. 2018)

## 6.2 Contextualization

One study in Swedish primary care showed that drug-related problems are a common problem in the care of elderly patients with multi-morbidity. The most common problem is unnecessary medication. (Lenander et al. 2018)

The overuse of antipsychotic drugs is happening within an environment that needs to be understood but also furthermore explored in order to reduce unnecessary use of antipsychotics. The sample of this literature review does not include even a single study that focuses solely on antipsychotic use while completely disregarding other factors in the care context.

A study done in the US in 2015 stressed the importance of contextualization by pointing to the possibility of drug substitution as a consequence of public reporting initiatives. If the focus is put only on decreasing antipsychotic use, the possibility of drug substitution without improving the quality of care is not being realized. (Bowblis et al. 2015)

In contrast, a study in Poland in 2017 that targeted delirium risk-factors, was successful in decreasing the initiation of antipsychotic drugs in the intervention group. (Gorski et al. 2017)

Some interventions included in this sample that encompass the reduction of antipsychotic use, target behavioral problems in people with dementia rather than focusing only on antipsychotic use. (Zwijnsen et al. 2011, Elliot et al. 2012)

This is reasonable because antipsychotics are often prescribed to help care staff manage behaviors when care staff is not educated to respond to using nonpharmacological approaches. (Chenoweth et al. 2018)

An intervention in the UK in 2012 that was aimed at educating and training care staff on elderly care for people with dementia was met with a high demand for such education. The same project was also documented with positive coverage in local media. (Elliot et al. 2012)

Recruitment rates for interventions with the potential to reduce antipsychotic use may be low due to the pressure of work. Tasks associated with interventions may also be neglected. (Jordan et al. 2015, Brooker et al. 2016)

In the UK in 2016, an intervention called "FITS" concluded that organizational barriers need to be addressed to ensure the results of future interventions. The Intervention, aimed at educating care staff (staff was designated to becoming "Dementia Care Coaches"), had

suffered from organizational barriers and challenges in many instances: Time was not sufficiently allocated for the additional education, workplace issues were prioritized over the intervention, data collection at sites was incomplete or not done, care staff did not achieve confidence after completing the training and named lack of organizational/management support as one of the reasons, and 35 care staff members dropped out of the intervention. The reasons why 35 care staff members dropped out of the intervention were documented: 35% resigned from their post, 35% dropped out because of work pressure, 12% dropped out because of personal reasons, 9% could not complete the training due to illness, 6% dropped out because of travel problems (that might coincide with bad communication in their organization and lack of time allocated), and lastly 3% did not give a reason for quitting the training. While the majority of care staff members rated the training overwhelmingly positively and showed improvements both personally and in their care homes, barriers and challenges were undeniably present. The most common barrier that was cited was a lack of time. Qualitative reflections suggested that a few Dementia Care Coaches experienced a negative impact on their well-being, because they encountered substantial, insurmountable, organizational barriers to the implementation of the intervention in their care home. FITS influenced at least one Dementia Care Coach's decision to resign from his post. Despite the challenges noted, a 31% reduction of antipsychotic prescriptions was achieved during the intervention. (Brooker et al. 2016)

Qualitative data collected in the HALT study in Australia suggested that successful implementation needed to change dementia care culture required strong managerial support, champion empowerment to lead change, reeducation of care staff, and the cooperation of families and GPs. Management systems, staffing arrangements, and resident issues were named as underlying mechanisms of the care context. (Chenoweth et al. 2018)

The use of antipsychotic drugs itself can be measured in different ways: prescription rates of antipsychotics, use of antipsychotics in patients, initiation rates of patients with PRN prescriptions, and PRN prescriptions. (Zwijnsen et al. 2011, Azermai et al. 2013, Bowblis et al. 2015, Brooker et al. 2016, Gorski et al. 2017, Fog et al. 2017, Ballard et al. 2018, Lenander et al. 2018)

The author has categorized factors that were included as a part of contextualizing care in the interventions in the following way:

**Staff and Learning:** workload and job satisfaction of nursing staff, Attitudes towards dementia in staff, goal attainment of learning, knowledge of staff, confidence

**Medication:** Use of hypnotics, anxiolytics, antidepressants, psychoactive medication, high or low use of antipsychotics, prescribing, drug-related problems by explicit criteria, drug-to-drug interaction

**Organization:** Economical perspectives, Publicity, Small or big facilities, reporting and non-reporting facilities, Special dementia care unit Characteristics

**Patient:** Quality of life of the patients, use of physical restrains, Number and nature of problems found and addressed, changes in individual problems, disease severity, delirium risk factors, length of stay, agitation, global deterioration, mood, unmet needs, mortality, quality of interactions, pain.

**Other factors** included in these studies are potential harms of the intervention, implementation, actual provision and use of the components of the care programme, and barriers and facilitators of implementation.

There is no standardized assessment tool to assess improvements of patient`s clinical symptoms after discontinuing antipsychotic drugs. (Azermai et al. 2013)

Different interventions have used different assessment tools to assess the patient's state: Neuropsychiatric Inventory (this assessment tool has since been improved for the nursing home: NPI-NH), Cohen Mansfield Agitation Inventory [CMAI], Clinical Dementia Rating, Cornell Scale for Depression in Dementia, Camberwell Assessment of Need for the Elderly, Abbey Pain Scale. (Azermai et al. 2013, Ballard et al. 2018, Chenoweth et al. 2018)

One study also measured the Quality of Interactions of the patient using the Quality of Interactions Scale [QUIS]. (Ballard et al. 2018)

## 7 DISCUSSION

Inappropriate behaviors due to neuropsychiatric impairments in people with dementia is a global issue. (Kales et al. 2014) These behaviors come with emotional and financial challenges. (Cohen-Mansfield 2001, WHO 2019)

The use of physical and chemical restraints occurs extensively in care homes and acute-care settings in many countries. This practice is common even in countries where regulations to uphold the rights of people to freedom and choice are in place. A legislative environment that is both appropriate, supportive and based on human rights standards needs to be internationally accepted. This is going to be needed to ensure the highest quality of care and support for people with dementia and their carers. (WHO 2019)

While the use of inappropriate chemical restraint is always unethical, this document has focused on the inappropriate chemical restraint that occurs in the care for elderly patients. The resulting focus on people that are suffering from dementia is explained by the fact that dementia is one of the main causes of disability and dependence in the Elderly. (WHO 2019) High rates of dependence and disability of patients that are suffering from dementia lead to a high number of caring relationships between patients that are suffering from dementia and healthcare professionals. Nurses commonly have more direct contact with the patients than any other group of healthcare professionals. For this reason, addressing challenging behaviors in patients that are suffering from dementia is a nursing issue.

When addressing global challenges, it is useful to use studies from all over the world, as this literature review does.

In Norway, it was found that a large part of elderly nursing home patients on long-term treatment with antipsychotics (aimed at Behavioral and Psychological Symptoms of Dementia) do well without this treatment. Therefore, standardized symptom evaluations and attempts to reduce antipsychotic use should be done regularly. (Ruths et al. 2008)

In the UK, an intervention including 165 patients with Alzheimer's found that for most patients, withdrawal of antipsychotics had no overall tendency to cause harm on functional and cognitive status. There may be a therapeutic value in the maintenance treatment of some more severe neuropsychiatric symptoms. However, the benefit must always be compared to the side effects and risk factors associated with antipsychotic therapy.

(Ballard et al. 2008)

One of the studies in the sample recorded a low baseline use of antipsychotic medications, which may be reflective of the major changes in clinical practice that have already been achieved in the last decade. (Ballard et al. 2018)

Ballard's perception that major changes in clinical practice have been achieved over the last decade in decreasing antipsychotic use does not contradict the World Health Organization's perception that the misuse of antipsychotics is still a global issue.

A literature review in 2001 classified 83 nonpharmacological intervention studies in the following categories: sensory, social contact (real or simulated), behavior therapy, staff training, structured activities, environmental interventions, medical/nursing care interventions, and combination therapies. The majority of nonpharmacological interventions in these studies are reported to have a positive impact. The research concluded that if interventions were better matched to patients' needs and capabilities they may result in greater benefits to the patients and their caregivers. (Cohen-Mansfield 2001)

A systematic literature review in 2015 concluded that the key issues of existing studies that focus on support of people with dementia are: "poorly designed and overly narrowly focused studies; variability and uncertainty in outcome measurement; lack of focus on the perspectives of people with dementia and supporters; and failure to understanding the complexities of living with dementia, and of the kinds of multifactorial interventions needed to provide holistic and effective support." (Dawson et al. 2015)

This finding supports the idea that contextualization is an important part of improving care for people with dementia. The rational antipsychotic reduction must always coincide with an improvement in the quality of care.

Contextualization in finding ways to improve dementia care is especially important because it has been lacking.

Reason's Swiss Cheese model can be a useful tool for the contextualization of the reduction of antipsychotics. Implementing several interventions in order to decrease the risk of antipsychotic misuse would be preferable to implementing just one intervention. Each intervention can be seen as a protective layer in the swiss Cheese model that aims at protecting the patient's safety. Additionally, each group of professionals that receives education on high-quality dementia care can act as a defensive layer for a vulnerable patient group.

A conscientiously organized health care system that emphasizes the rational use of medicine is needed to ensure that healthcare professionals are held accountable but are also

supported in following clinical guidelines. Interventions that were used in this sample have employed supervision and feedback among other things. If these interventions were to be implemented into health care systems and supported by appropriate and enforced regulations, they would be a good way to promote rational drug use and in turn decrease unethical abuse of patients that employs antipsychotic drugs. (WHO 2002)

## 7.1 Conclusion

The research question: "How can the unnecessary use of antipsychotics in elderly patients be reduced successfully and rationally?" was partially answered by this thesis.

While the author can make recommendations for actions that need to be taken and what mentality needs to be adopted so that antipsychotic misuse in the elderly can be reduced successfully and rationally, the results of this study are rather broad and individual countries and organizations need to find the method that is most suitable for them themselves. However, this study is very useful for granting a basic orientation in addressing the issue of antipsychotic misuse in the elderly. More research needs to be done before the intervention studies mentioned in the sample can be implemented on a national scale.

The author makes the following recommendation for how the issue of antipsychotic misuse can be reduced successfully and rationally:

Successful contextualization that is needed to improve the rational medicine use of antipsychotics with interventions is lacking in some studies that have attempted to do so.

This study can be helpful for future studies that focus on designing and enhancing intervention studies in the elderly. The contextualization and the summary of intervention types can be used to help in the contextualization of future studies and also to inspire ideas for possible combinations of different intervention types.

Education about high-quality dementia care is lacking in many places and for this to change managerial and organizational challenges need to be addressed. Resources that would allow for a change in care culture needed to integrate person-centered care need to be made available. (Brooker et al. 2016, Chenoweth et al. 2018)

Registered nurses who are monitoring and documenting their patients carefully are in a position to address unnecessary drug use. There is a direct impact of nursing practice to the wellbeing of older people.

A standard for professional development in the form of continuous educational programmes addressing issues related to drug use before and after the graduation of healthcare professionals should be a requirement for practicing. Nurses need to recognize the need to increase their understanding and knowledge of drug therapy. (WHO 2002, Dingwall 2007a)

Nurses hold a position to not only educate themselves but also their patients and their patient`s relatives.

For a change to occur, nurses must recognize their responsibilities within a complex healthcare system and within the multidisciplinary team in relation to the safe administration of medicines. The suffering and the low quality of care that some elderly patients receive must be noticed by nurses worldwide. It is the role of the nurse to recognize low quality of pharmacological as well as overall treatment. (Dingwall 2007a)

## **Limitations**

The generalizability of this study is very weak because of its very small sample size and international focus. The study encompasses the contextualization of reducing antipsychotic drugs only narrowly because it includes studies from all over the world and also because of its small sample size. The sample has not been researched to the point of saturation due to the author`s limited resources. (i.e. time)

The study would have been stronger if the author had collected a bigger sample and researched it to the point of saturation. A bigger sample would have included other literature reviews that focused on the same issue and also qualitative studies that documented how different groups of people that are involved in this issue (physicians, nurses, relatives, patients) view antipsychotic misuse.

The study furthermore does not explore the topic of cultural and sociological differences and how they might affect this issue. Evidence for what interventions might be more effective in what kind of context (i.e. care home size, private vs. public sector) was not found.

The concrete actions that nurses could take and the tools that they could use for this (e.g. Cohen-Mansfield Agitation Inventory, Dementia Quality of Life Instrument..) are not explored in enough detail.

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## APPENDIX

### A Word Count from Sample

All word counts were made with the help of wordcounter.net

The effects of abrupt antipsychotic discontinuation in cognitively impaired older persons: A pilot study

**Keywords according to text:** antipsychotics; withdrawal; geriatric; dementia

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- 59x times = 3% discontinuation
- 50x times = 3% patients
- 17x times = 3% withdrawal symptoms
- 19x times = 3% antipsychotic discontinuation
- 11x times = 4% One month follow, after one month

Impact of person-centred care training and person-centred activities on quality of life, agitation, and antipsychotic use In people with dementia living in nursing homes: A cluster-Randomised controlled trial

- 91x times = 4% care
- 79x times = 3% WHELD
- 70x times = 3% dementia
- 27x times = 3% wheld intervention
- 61x times = 7% nursing homes, care home/s

The Effects of Antipsychotic Quality Reporting on Antipsychotic and Psychoactive Medication Use

**Keywords according to text:**

Nursing home compare, public reporting, quality, antipsychotics, psychoactive medications

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- 173x times = 6% reporting
- 112x times = 4% public
- 64x times = 3% quality
- 97x times = 10% public reporting
- 26x times = 3% nursing homes
- 19x times = 4% after public reporting

FITS into practice: translating research into practice in reducing the use of antipsychotic medication for people with dementia living in care homes

**Keywords according to text:** "antipsychotic medication and dementia; care homes; training, staff roles; quality of care; person centred care"

- 101x times = 5% care
- 68x times = 3% training
- 62x times = 3% dccc ( dementia care coaches)
- 10x times = 3% fits practice programme

### Critical Contextual Elements in Facilitating and Achieving Success with a Person-Centred Care Intervention to Support Antipsychotic Deprescribing for Older People in Long-Term Care

- 207x times = 7% care
- 124x times = 4% staff
- 97x times = 3% champions
- 76x times = 9% person-centred
- 57x times = 7% care staff
- 33x times = 8% person centred care
- 19x times = 5% Person centred approach/es
- 44x times = 11% Direct care staff

Drug-related problems and changes in drug utilization after medication reviews in nursing homes in Oslo, Norway

**Keywords according to text:**

"Drug-related problems; medication review; nursing home; elderly; discontinuation"

- 148x times = 12% drug/s
- 47x times = 5% drps or drug related problems
- 55x times = 5% patient/s

Nonpharmacological Interventions Targeted at Delirium Risk Factors, Delivered by Trained Volunteers (Medical and Psychology Students), Reduced Need for Antipsychotic Medications and the Length of Hospital Stay in Aged Patients Admitted to an Acute Internal Medicine Ward: Pilot Study

- 85x times = 5% patients
- 59x times = 4% intervention
- 56x times = 3% volunteers
- 39x times = 2% delirium
- 21x times = 3% Control group
- 16x times = 3% Intervention group

Effects of medication reviews on use of potentially inappropriate medications in elderly patients; a cross-sectional study in Swedish primary care

**Keywords according to text:** "Elderly, Primary care, Medication review, Drug-related problems, Potential inappropriate medication, Clinical pharmacist"

- 75x times = 4% patients
- 138x times = 9% Medication and drug/s
- 50x times = 7% medication review/s
- 22x times = 3% primary care
- 9x times = 3% drug related problems

Grip on challenging behaviour: a multidisciplinary care programme for managing behavioural problems in nursing home residents with dementia. Study protocol

- 42x times = 4% care
- 28x times = 3% dementia
- 22x times = 2% bps (behavioural problems)
- 20 x times = 5% care programme
- 13x times = 3% nursing staff
- 10x times = 3% quality (of) life
- 8x times = 22% cost effectiveness

Nurse-Led Medicines' Monitoring for Patients with Dementia in Care Homes: A Pragmatic Cohort Stepped Wedge Cluster Randomised Trial

- 96x times = 3% medicines
- 79x times = 3% care
- 31x times = 3% medicines monitoring
- 26x times = 3% nurse led

Using a practice development project to improve standards of care for people with dementia

**Keywords according to Text:** "Care homes, Dementia, life story work, mental health, Practice development, training"

- 57x times = 6% care
- 33x times = 3% dementia
- 31x times = 3% training
- 27x times = 3% staff
- 24x times = 6% care home/s

## B Categories in table

<p><b>Educational Intervention:</b></p>	<ul style="list-style-type: none"> <li>- Using a practice development project to improve standards of care for people with dementia. (Elliot et al. 2012)</li>   <li>- FITS into practice: translating research into practice in reducing the use of anti-psychotic medication for people with dementia living in care homes. (Brooker et al. 2016)</li>   <li>- Impact of person-centred care training and person-centred activities on quality of life, agitation, and antipsychotic use in people with dementia living in nursing homes: A cluster-randomised controlled trial. (Ballard et al. 2018)</li>   <li>- Critical Contextual Elements in Facilitating and Achieving Success with a Person-Centred Care Intervention to Support Antipsychotic Deprescribing for Older People in Long-Term Care. (Chenoweth et al. 2018)</li> </ul>
<p><b>Reporting-based Intervention</b></p>	<ul style="list-style-type: none"> <li>- Grip on challenging behaviour: a multidisciplinary care programme for managing behavioural problems in nursing home residents with dementia. Study protocol. (Zwijssen et al. 2011)</li>   <li>- The effects of abrupt antipsychotic discontinuation in cognitively impaired older persons: A pilot study. (Azermai et al. 2013)</li>   <li>- The Effects of Antipsychotic Quality Reporting on Antipsychotic and Psychoactive Medication Use. (Bowblis et al. 2015)</li> </ul>

	<ul style="list-style-type: none"> <li>- Nurse-Led Medicines' Monitoring for Patients with Dementia in Care Homes: A Pragmatic Cohort Stepped Wedge Cluster Randomised Trial. (Jordan et al. 2015)</li> </ul>
<p><b>Other:</b></p>	<ul style="list-style-type: none"> <li>- Nonpharmacological Interventions Targeted at Delirium Risk Factors, Delivered by Trained Volunteers (Medical and Psychology Students), Reduced Need for Antipsychotic Medications and the Length of Hospital Stay in Aged Patients Admitted to an Acute Internal Medicine Ward: Pilot Study (Gorski et al. 2017)</li> <li>- Drug-related problems and changes in drug utilization after medication reviews in nursing homes in Oslo, Norway. (Fog et al. 2017)</li> <li>- Effects of medication reviews on use of potentially inappropriate medications in elderly patients; a cross-sectional study in Swedish primary care. (Lenander et al. 2018)</li> </ul>

## C Notes

This Bachelor thesis was started as a project by two nursing students. Due to personal differences, the authors decided to continue the project separately. The author of this study was pointed towards the general topic of antipsychotic drugs by the other nursing student. Christiane Kallenbach has written this study alone. The other student might have had an influence on this paper on a subconscious level as the authors had discussed the document in several instances.