

IMPLEMENTATION OF A NURSE LED  
PSYCHIATRIC CONSULTATION SERVICE  
IN A LONG-TERM CARE FACILITY IN SWITZERLAND

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### **Dedication and Acknowledgments**

At this point, I would like to extend a special thank you to all the nurses who took time out of their busy schedules to take part in this project. It is because of their support in taking part in the data collection that I was able to gain the insights of this DNP project.

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## Abstract

**Background:** Demographic changes in Switzerland highlight the increasing number of people needing care and entering nursing homes as the population ages. Prevalence of depression, dementia and delirium among nursing home residents is estimated to be up to 50%. These conditions lead to behavioral problems in the nursing home, putting staff and other residents at risk for physical harm and the resident at risk for depression. Action is needed to manage age-related mental and neurological disorders, focusing on depression, delirium, and dementia. Psychiatric consultations (PC) by advanced practice nurses (APNs) show the potential to address these challenges with the help of systematic screening.

**Purpose:** This quality improvement (QI) project aimed to implement a psychiatric nurse-led consultation service in a 130-bed nursing home in the rural region of the canton of Bern in Switzerland over a three-month period. Systematic screening of newly admitted residents for signs of depression and delirium was implemented as part of this process.

**Methods:** The project was implemented using the PDCA cycle. The PEPPA framework guided the steps for implementing the new APN role. Baseline data were collected from newly admitted residents. Two weeks after admission, trained on-site nursing staff assessed for signs of delirium (Delirium Observation Scale [DOS]) and depression (Geriatric Depression Scale [GDS]). In parallel, data collection began with long-term residents who were referred for a medical-psychiatric consultation and were additionally visited by the APN.

**Results:** Among the newly admitted residents, approximately fifty percent showed signs of depression, and more than thirty percent showed signs of delirium within two weeks of admission. A total of fifteen residents had referrals for psychiatric consultation. The main reasons for referral were behavior problems associated with the progression of dementia (47%), development of delirium (27%), signs of depression (20%), and social problems (7%). In an average of three consultations per case, individualized multimodal interventions were recommended by the APN under the supervision of the chief of geriatric psychiatry.

**Recommendations and Conclusion:** The implementation of the psychiatric consultation service conducted by an APN shows promising improvements on early detection and management of depression and delirium, supports individualized care, and includes educational benefits for the nursing staff.

**Key Words:** psychiatric consultation, nursing home, advanced nursing practice, depression, delirium, dementia,

## **Background and Significance**

### **Increasing number of elderly and need of care**

The Swiss population has a high life expectancy of 81.6 years for men and 85.7 years for women and good access to healthcare (Federal Statistical Office [FSO], 2021c). Over the next three decades, the number of people over 65 will increase to 2.7 million. The prevalence of chronic diseases also increases with age. At the end of life, the Swiss are increasingly suffering from chronic, care-intensive diseases (e.g.: cardiovascular disease, diabetes, cancer, depression, and dementia) (FSO, 2021a). The proportion of people aged 65 and over in nursing homes increases rapidly with age. Those requiring long-term care will increase by 46% by 2030 (FSO, 2021b).

The demographic and health trends in Switzerland are leading to an increased need for care (FSO, 2021a). According to the most recent survey by the FSO (2019), 1.5% of people aged between 65 and 79 were living in a nursing home, compared with 15.7% of people aged 80 and over. In 2019, there were 1563 long-term care facilities in Switzerland. 47% of the older people who live in a nursing home have been there for less than one year. The proportion of elderly staying for 5 years, or more is 15%. The average length of stay is nearly two and a half years (881 days), (FSO, 2019, 2021b). The average cost per day in a nursing home is CHF 307.00 (FSO, 2021b).

The health status of nursing home residents tends to be significantly worse than that of people of the same age living in private households (FSO, 2021a). Residents of nursing homes were most often hospitalized in 2017 for the following reasons: Injuries (22%), diseases of the circulatory system (15%), respiratory system (11%) or digestive system (9%) and mental disorders (8.8%), (FSO, 2019). But these statistics need awareness.

Older people with depressive symptoms are less functional than people with chronic conditions like pulmonary disease, high blood pressure, or diabetes. Depression contributes to perceived poor health, healthcare use and costs (WHO, 2017) .



## **Increasing Mental Health Concerns on depression and dementia**

Demyttenaere et al. (2004) estimate that between one-third and one-half of people with mental illness in developed countries are still untreated. Mental health problems are still under-recognized by health professionals and older people themselves, and the stigma associated with these conditions makes people reluctant to seek help (WHO, 2017).

According to the findings of the “*European MentDis\_ICF65+ study*” by Andreas et al. (2017), there are higher prevalence rates for most mental disorders in people over the age of 65 years. The findings show that:

“One in two individuals aged 65 to 84 years had experienced at least one mental disorder in their lifetime, one in three had done so within the past year, and nearly one in four currently had a mental disorder. The most prevalent disorders were anxiety disorders, followed by affective and substance-related disorders”, (Andreas et al., 2017, pp. 128-129). Compared to other European countries, Switzerland recorded the highest prevalence of panic disorder and major depressive disorder (47.1%), (Andreas et al., 2017). This shows that mental illness is a growing concern among elderly living in this country and can be assumed to the elderly in nursing homes.

Depression frequently co-occurs with Alzheimer’s disease and other types of dementia ((FOPH), 2019). The proportion of elderly with dementia is also increasing. Based on estimates the prevalence of dementia is going to double to 300’000 in the Swiss population until 2050 (Nichols et al., 2022; Spiess et al., 2023). Regarding the impact on nursing homes, it means that numbers of affected residents will also increase in the future. Recent findings show that overall, 64.5% of nursing home residents have either a diagnosis of dementia or a presumption of dementia (AlzheimerSchweiz, 2014).

According to the National Institute for Health and Care Excellence [NICE], people living with dementia are at significantly increased risk of delirium, and many older people with delirium have undiagnosed dementia (NICE, 2018).

Delirium is a complex syndrome. It is a disturbance of consciousness accompanied by a change in cognition. It is a serious illness that can be confused with dementia or, less commonly, depression. In contrast to dementia, delirium tends to develop quickly and is usually temporary (NICE, 2017; Videbeck, 2019).

Delirium is the result of an identifiable physical, metabolic, or cerebral disorder or disease, related to drug intoxication or withdrawal (Videbeck, 2019). The primary management of delirium is the identification and treatment of causal or contributing medical conditions (e.g.: infections, trauma, CNS pathology, hypoxia, acute vascular diseases), (NICE, 2023). In nursing home residents, the prevalence of delirium ranges between 4.8 to 38 percent (Wilson et al., 2020). The mortality of unrecognized and untreated delirium is approximately 20% to 30% (Wilson et al., 2020). This supports the need for preventive strategies to address adverse outcomes like increased morbidity and mortality, long-term cognitive and functional decline, and hospital costs.

In addition, more than 90% of people who have dementia are affected by behavioral and psychological symptoms of dementia [BPSD] that are among the most common reasons for transfer to a nursing home (Klöppel et al., 2020). As stated in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V): “BPSD includes emotional, perceptual, and behavioral disturbances that are similar to those seen in psychiatric disorders” (Cloak & Al Khalili, 2022). This means BPSD can be present in forms of e.g.: disruptive behavior, sleep disturbances, restlessness, anxiety, screaming, crying, aggressiveness as part of the illness. All of those living with dementia will experience at least one symptom of BPSD at a time (Anand et al., 2018).

In summary, particularly challenging for healthcare staff in nursing homes are those age-related mental health conditions that include depression, delirium, and BPSD ((FOPH), 2019; Boltz et al., 2020; Klöppel et al., 2020).

The underlying causes, risk factors, and symptoms of these behavioral problems are often not appropriately addressed by long-term care staff due to lack of screening and assessment and lack of geriatric psychiatric training (NICE, 2023; Smith et al., 1994; WHO, 2017). As stated by the Swiss national dementia strategy there is demand for action regarding early assessment and management of the three syndromes depression, delirium and BPSD (Klöppel et al., 2020).

### **Current Care does not meet the mental health needs**

The Swiss study by Stocker et al. (2016) demonstrated that geriatric psychiatric care still fails to meet the mental health needs. Long-term care in nursing homes is often inadequate due to staff shortages, lack of trained health professionals and gaps in care provision on early detection and referral to psychiatric treatment. General Practitioners (GPs) and home management are conservative when it comes to referring psychiatric treatment to specialist mental health professionals (Stocker et al., 2016).

The lack of networking among stakeholders leads to limited care provision and delays in Swiss nursing homes (Artiset & Curaviva, 2023). Staff shortages in mental health professionals and unsecured financial aspects present additional barriers that reinforce delays in adequate care delivery (Wille & Gilli, 2023).

This delay affects the problems in daily care for residents as well as burdens for the nursing staff. This is realized by the worsening of the acute mental health state that can turn into aggressive behavior, worsening of delirious syndromes (e.g., hallucinations, anxiety, disturbed day and night rhythm, cognitive decline, higher risk for falls and impact on pre-existing chronic disorders due (e.g., cardiovascular and diabetes). As a result, there is a growing need to support and educate the nursing staff (Moyle et al., 2010; Muralidharan et al., 2019).

In this context, the Swiss study highlights the potential and benefits of specialized nurses to address challenges and gaps in mental health care (Stocker et al., 2016).

### **Benefits for psychiatric consultation by Advanced Practice Nursing**

International studies have shown the potential for psychiatric consultations provided by Advanced Practice Nurses (APN) as an effective strategy for improving mental health outcomes in long-term care (Craig & Pham, 2006; Koekkoek et al., 2016; Snowdon, 2001). The Psychiatric Mental Health Nurse Practitioners (PMHNP) are prepared with advanced knowledge and skills towards physical and mental health assessment, pathophysiology, pharmacology, and psychotherapy (APNA, 2014; Tusaie & Fitzpatrick, 2017). Thus, the implementation of this role in long-term care settings is expected to have a positive impact on the early assessment and management of age-related mental health conditions in terms of depression, delirium, and dementia.

According to the demands by the WHO and the Swiss national strategy for dementia sustainable strategies for long-term care must be established ((FOPH), 2019; WHO, 2017). This strengthens the need for implementing evidence-based strategies and new models of APN care for early screening and management in nursing homes for age-related mental health concerns about the so-called Three Ds: Depression, Dementia and Delirium.

## **Purpose**

The general purpose of this quality improvement (QI) project is the implementation of a psychiatric consultation service conducted by a PMHNP in a nursing home in the rural region of the Canton of Bern in Switzerland during a three-month period. As part of this process, systematic screening of newly admitted residents for signs of Depression and Delirium are implemented.

Therefore, the following question arises and will lead this projects design and method: “In newly admitted nursing home residents in the rural region of the canton Bern in Switzerland will a nurse led psychiatric consultation and training in mental health assessment and screening lead to improvement of early detection of mental health problems and treatment of delirium and depression three months after implementation?”

This QI project will also address the following subordinate aims.

- Supplying an overview about reasons for referral to psychiatric consultation.
- Sensitizing on-site nursing staff for early detection and management of the 3 Ds.

The next chapter presents the review of the current evidence and includes the concepts addressed in this project. It also describes the differentiation of the excluded concepts.

## **Review of Current Evidence**

This section informs about the comprehensive literature search conducted from October 2021 to May 2022 in the electronic databases. The synthesis of the literature search forms the theoretical principles of the planned nursing interventions as well as for the further method of the project.

### **Search Strategy**

The literature search on psychiatric nurse-led consultations in long-term care facilities was conducted during eight months in the electronic databases: Pubmed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycInfo, and Google Scholar. This procedure stands for the primary search strategy.

The secondary search strategy included searching the databases using the snowball principle via "Related Articles" and reference authors. Furthermore, the search was performed with different combinations of the English keywords as well as available MESH terms, respectively with the German keywords. In the Appendix D: Prisma Flow Diagram the used search terms are deposited including the Prisma Flow Diagram.

### **Description of methodological Inclusion and Exclusion criteria**

As methodological inclusion and exclusion criteria, the publication period not older than ten years and the availability in German or English were set. Further, the cultural context of the study should be comparable to Western European conditions to ensure comparability with the local conditions and standards of care. It is notable that relevant studies about psychiatric consultations in nursing homes are older than ten years. So, the publication period was expanded.

Furthermore, only studies with available abstracts were selected. The articles were then screened for relevance to the project's purpose and for content-related inclusion and exclusion criteria.

### **Description of content-related Inclusion and Exclusion criteria**

In terms of content, inclusion criteria include the population (nursing home residents older than 65 years of age with mental health problems [e.g., depression, delirium, behavioral and psychological symptoms of dementia]), the setting (nursing home, long-term care facility) and interventions provided by a mental health specialist (Psychiatrist; Advanced Nurse Practitioner [ANP]; Psychiatric Mental Health Nurse Practitioner [PMHNP]; psychogeriatric consultation).

The exclusion criteria refer to studies or articles that describe interventions using psychopharmacological approaches, integrate physical therapies, focus on telemedicine only, or refer exclusively to effects of the Corona pandemic.

### **Summary of Search Strategy**

A sum of 86 studies were identified using this search strategy. Of these, 25 were duplicates. After screening abstracts for inclusion and exclusion criteria, another 42 studies were excluded. This resulted in 19 remaining studies whose main concepts addressed **reasons for admission to nursing homes, caregiver challenges, Assessment and Screening, reasons for referral to psychiatric consultations and care providers of psychiatric consultation.** The evidence level of the studies was heterogeneous, ranging from case reports to studies that were designed as experimental studies. The literature review revealed that recent research in aging and nursing homes relate to the effects of the Covid pandemic or relate to physical changes in aging.

Only a few recent studies deal with the mental health needs and well-being of residents. There is a gap in the literature that needs more attention.

## Synthesis and Summary of Evidence

### Reason for Admission to Nursing Home

The transfer to a nursing home still carries a negative public connotation. Seniors and relatives are afraid of the life-changing decision. In part, prejudices shape the image of nursing staff and moving into the new care setting. If caring in the familiar environment can no longer be ensured due to the complex state of health, pre-existing chronic diseases and behavioral problems, or lacking social support admission is unavoidable (Hirsch & Kastner, 2004; Morriss et al., 1994; van den Brink et al., 2018). Therefore, the following reasons were found (see Summary in table 1).

**Table 1** : Summary of Reasons for Admission to nursing home.

<ul style="list-style-type: none"> <li>• predominantly dementia patients, fewer residents with physical impairments.</li> </ul>
<ul style="list-style-type: none"> <li>• Often not planned (exception: special facilities)</li> </ul>
<ul style="list-style-type: none"> <li>• Deterioration of the health situation</li> </ul>
<ul style="list-style-type: none"> <li>• Overload or absence of family caregivers</li> </ul>
<ul style="list-style-type: none"> <li>• Search of the affected person for security or social inclusion</li> </ul>
<ul style="list-style-type: none"> <li>• Desire not to be a burden.</li> </ul>
<ul style="list-style-type: none"> <li>• unoccupied by activities,</li> </ul>
<ul style="list-style-type: none"> <li>• incontinence and physical dependence.</li> </ul>
<ul style="list-style-type: none"> <li>• At the urging of general practitioners or other professions</li> </ul>

In summary, physical, psychiatric, and social factors are important determinants of nursing home admission that need to be managed.



## Challenges to Nursing Homes

As evidence shows, caregivers and staff in nursing homes and long-term care are inadequately prepared to meet the overall challenges for several reasons (Creapeau et al., 2022; Eika et al., 2015; Grabowski et al., 2010; Haskins & Wick, 2017; Jain et al., 2018; Kennedy, 2005). The most often cited challenges are summarized in Table 2 below. They are discussed in more detail in the following sections.

**Table 2** : Summary of Challenges in Nursing Homes

• Challenges for staff in nursing homes
• Frequent staff turnover, burnout, sick leave
• Time and personnel resources scarce
• Documentation effort
• Missing support by team leaders / management
• Gerontological psychiatric training is lacking.
• Handling and structure often tailored to healthy caregiving.
• Residents with multimorbid disorders
• Increase in need for care and behavioral disorders.
• Functional care instead of primary, integrated care
• Lack of residential concepts
• Unbalanced skill and grade mix in nursing staff

The increasing imbalance of the skill and grade mix is worrying for most nursing homes. The proportion of trained professionals to assistants is often limited, and leads to maintaining minimal standards (Creapeau et al., 2022; Peter et al., 2020). In addition, staff retention and turnover in long-term care is an increasing problem, which has been exacerbated since the Corona pandemic (Shimp & Jackson, 2022).

Care needs are figured out based on the standardized Resident Assessment Instrument (RAI) and the Resident Classification and Billing System for Nursing Services (BESA), (BESAQSys, 2022). The classification of the level of care is decisive for the time available to the caregivers and financing of care. This means there are high demands and efforts for correct and adequate documentation. These conditions result in continued stress and workload for staff, which ultimately impacts resident care.

Thus, priorities in long-term care are often placed on functional and basic care. Mental Health problems are often overlooked, not recognized, or assigned to the normal signs of aging. Problems are pronounced when the behavioral changes in residents turn into irritable, aggressive, defensive, or demanding behavior towards staff or other residents. This leads to staff- and time-intensive interventions (e.g., restraining measures) that push staff to their physical and emotional limits. Even if they experience physical and verbal aggression during daily routines.

Due to lack of dementia related knowledge, lack of communication strategies and time pressure, it is likely that aggressive behavior occurs during care that causes damaging of property, serious injuries, and traumatization in staff and residents. The lack of gerontological psychiatric knowledge and training increases the feeling of powerlessness and helplessness. This in turn leads to changes in the quality of care and demands for sedative medication (e.g., neuroleptics, benzodiazepines) or transition to a psychiatric hospital. This sometimes marks the beginning of a vicious circle for the aging person with mental health problems if access is limited or other options are not available due to financial barriers.

## **Screening and Assessment of Residents for signs of delirium**

Early Assessment and Screening is crucial and starts on admission of new Residents. The admission phase is particularly critical after post-acute admission in the first two weeks and increases the risk of developing signs of delirium up to 40 percent (von Gunten & Mosimann, 2010). The management of underlying causes and risk-factors needs to be a priority to prevent adverse outcomes (NICE, 2023).

For detection of delirium there is evidence for high diagnostic accuracy for the “Delirium Observation Screening Scale (DOS)” with pooled estimates of sensitivity (90%; 76%; 97%, Confidence Interval [CI] 95%) and specificity (92%; 88%; 94%, CI 95%) as demonstrated by the systematic review by Park et al. (2020). This aligns to the recommendations for the Prevention, Diagnostic and Therapy of Delirium in the Elderly (Savaskan et al., 2016).

In contrast the Swiss Study by Urfer Dettwiler et al. (2022) recommends another promising instrument for nursing homes: the “I-AGED” which evaluates the signs and course of the delirium by a broader perspective. But the acceptance to use a systematic screening tool is highly dependent on the ease of application and attitude of the nursing staff (Gemert van & Schuurmans, 2007).

The requirements of the Screening are applicable for staff during shifts and can be integrated in routine care. The algorithm of 13 items is rated by Never = 0 point, Sometimes or always = 1 point. The cut-off scores above three emphasize the presence of delirium (DOS >3). (Appendix E: The Delirium Observation Screening (DOS)).

## **Screening and Assessment of Residents for signs of depression**

For assessment and screening of depressive symptoms in the elderly there is evidence to use validated and reliable instruments like the Geriatric Depression Scale (GDS), (APA, 2020; Grabowski et al., 2010; NICE, 2017; Pocklington et al., 2016). Although there are other clinical meaningful instruments that measure depressive symptoms the GDS supports comparability to other research in caregiving ((FOPH), 2019; APA, 2008, 2020). The systematic review by Pocklington et al. (2016) shows *“Pooled sensitivity was 0.89 (95% confidence interval (CI) 0.80-0.94), and specificity was 0.77 (95% CI 0.65-0.86) for the GDS-15 at the recommended cut-off score of 5.”*

The GDS short form (see Appendix F: Geriatric Depression Scale (GDS, Short Form) consists of 15 yes or no items that assess unhappiness, apathy, anxiety, loss of hope, and loss of energy. The advantage of the GDS short form towards the long form with 30 Items is the time needed for application and is not cognitively demanding (Smarr & Keefer, 2011). The average time for respondents to complete the GDS 15 is estimated at 2-5 minutes (Marc et al., 2008). The final score shows the likeliness of depression by a cut off score of (GDS  $\geq$  5).

## **Reasons for Referral to psychiatric consultations**

Regarding the findings by Wilson et al. (2019) the most common reason for referral is uncooperative/aggressive behavior (22%). low mood (31%) or agitation (29%), behavioral and psychological symptoms of dementia (41%) and Delirium (31%). In summary, delirium and depression are those mental health issues that are often undetected or mirrored by signs of Dementia and BPSD (Cloak & Al Khalili, 2022; Kim et al., 2021; Orth et al., 2019; Wilson et al., 2019).

For the present project, the understanding of the clinical factors of age-related mental health conditions is essential for further categorizing. To this purpose, an overview of the clinical factors and characteristics of delirium, mild cognitive impairment, dementia, and depression is provided with detailed information for assessment (see Appendix G: Overview of Clinical Factors); (Overview based on Boltz et al., 2020, pp. 120-121).

The categories for further clinical assessment reflect differentiation between Onset, Course, Progression, Duration, Alertness, Attention, Orientation, Memory, Thinking, Perception, Psychomotor behavior, associated features. The consequences of these disorders, such as impaired attention and cognition, pose high safety risks to residents and caregivers. These are often related to BPSD and are recognized as a greater burden for caregivers than cognitive impairment or memory loss due to dementia itself (Klöppel, 2014). For clinical reasons it is useful to classify BPSD into the following domains (Table 3).

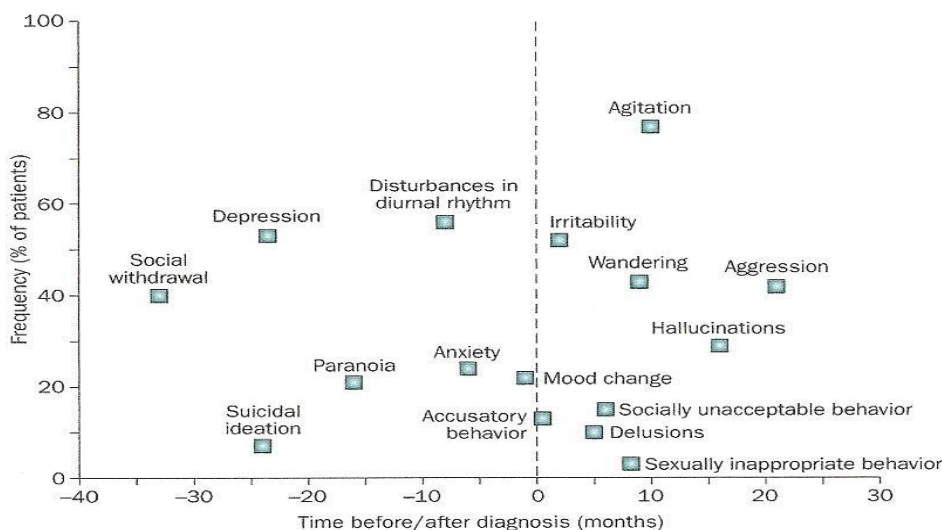
**Table 3 :** Clinical Domains of BPSD based on (Klöppel, 2014).

<b>cognitive/perceptual</b>	delusions, hallucinations
<b>motor</b>	pacing, wandering, repetitive movements, physical aggression
<b>verbal</b>	e.g., yelling, calling out, repetitive speech, verbal aggression
<b>emotional</b>	e.g., euphoria, depression, apathy, anxiety, irritability
<b>vegetative</b>	disturbances in sleep and appetite

Because dementia is a progressive disease, it is helpful to follow its course.

Specific BPSDs tend to occur more often at certain stages.

The next figure 1 (Jost & Grossberg, (1996) cited in Klöppel, 2014) illustrates the peak frequency of BPSD during the course of Alzheimer Dementia. Thus, as the disease progresses and residents enter nursing homes later in life, the incidence of challenging behavior due to BPSD increases.



**Figure 1** Peak Frequency of behavioral symptoms as Alzheimer Disease progresses (Jost & Grossberg, 1996, p. 1079) Permission obtained from Blackwell Publishing ©

### Models of Care: Psychiatric Consultations provided by Psychiatrists and APNs

Psychiatric consultations provide valuable support for improving mental health in nursing homes (Fuchs et al., 2022). But there are differing views on the benefits and yields of these consultations as they are principally provided by psychiatrists with further education in conciliar - and liaison (C+L) psychiatry (Fischer et al., 2011; Lücke & Müller, 2018). The C+L models or mixed forms are often opposed to each other.

A request-based conciliation model may select patients with more severe symptoms and treatment needs than a liaison model with regular consultations. In a quasi-liaison model, clients with mild symptoms are more likely to be seen by a psychiatrist in the first place. Shorter waiting times for consultations are the main advantage of request-based consultation models (Lücke & Müller, 2018).

In this context, evidence supports the benefit of PMHNPs for psychiatric consultations (Fuchs et al., 2022; Wilson et al., 2019). These trained professionals provide comparable services (prescription authority varies), they perform educational and coaching tasks in the nursing teams, collaborate with primary care providers and other health care professionals in a clinical practice, consultative and leadership role (Brimblecombe et al., 2019; Burian et al., 2014; Ellis & Alexander, 2016; Fuchs et al., 2022; Hasemann et al., 2016; Koekkoek et al., 2016; Stalder et al., 2021; van den Brink et al., 2018; Wilson et al., 2019).

But in western European countries role clarity is still missing and needs to be supported by organizations (Brimblecombe et al., 2019). For sustainable implementation of this role, it is essential to learn from the “Pan-Canadian Framework” regarding advanced practice nursing (Kipping et al., 2022). The authors describe the stepwise approach of implementing a NP role in a mental health setting in Canada using the research informed PEPPA-Framework (Kipping et al., 2022). This framework (see Appendix G) is recognized as a nine-step, systematic healthcare planning guide designed to promote effective development, implementation and evaluation of advanced practice nursing (APN) roles (Bryant-Lukosius et al., 2004; Bryant-Lukosius et al., 2016; ICN, 2020).

### **Summary of Evidence**

The preceding literature review highlighted the need for quality improvements in early screening and management of signs of depression, delirium, and BPSD in nursing home residents. Therefore, newly admitted residents are at increased risk for delirium after post-acute admission that is associated with higher morbidity and mortality.

Current Evidence supports the need to focus on early assessment and management of dementia, depression and delirium (the so -called three Ds) in nursing homes (Klöppel et al., 2020; Urfer Dettwiler et al., 2022). Screening instruments for Depression and Delirium are recommended with high sensitivity and specificity for GDS and DOS. Evidence supports that psychiatric consultations conducted by an Advanced Practice Nurse (PMHNP) are effective to address the mental health needs for prevention and management in nursing homes. The PEPPA Framework guides sustainable role implementation.

Further, the following Guidelines are recommended:

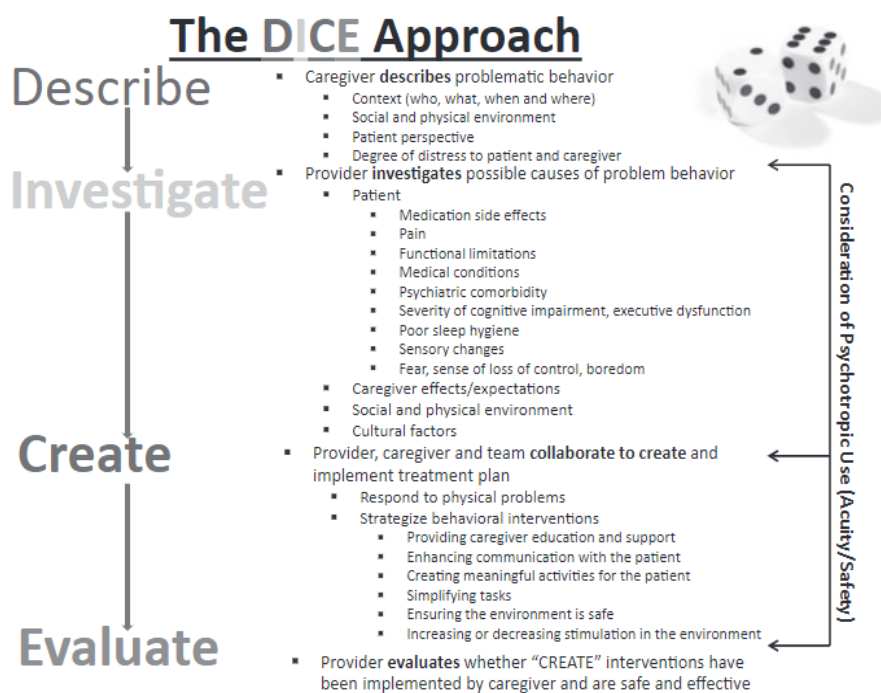
1. The National Imperative to Improve Nursing Home Quality: Nursing Home Quality Standard (National Academies of Sciences & Medicine, 2022)
2. Recommendations for the Prevention, Diagnostic and Therapy of Delirium in the Elderly (Savaskan et al., 2016)
3. NICE Guideline “Delirium in Adults” (NICE, 2019)
4. Assessments in long-term care for people with dementia with suspected depression, delirium as well as behavioral and psychological symptoms. ((FOPH), 2019).



## Conceptual Framework / Theoretical Model

There are diverse algorithms that support best practice in behavioral challenges of residents in long-term care. The “DICE [(Describe, Investigate, Create, Evaluate)]” or “DATE [Describe & Measure, Analyze, Treat, Evaluate]” Approach build a framework for psychiatric consults for problematic behavior (Kales et al., 2014; Tible et al., 2017). The DATE approach focuses on the medical and diagnostic perspective. While the DICE approach more strongly reflects the perspective of caregivers and patients and points at the importance of interprofessional collaboration.

The DICE Approach best captures the issues of this DNP project about psychiatric consultations in nursing homes. It focuses on analysis for underlying causes and includes treatment options that can be categorized as pharmacological, medical, or nonpharmacologic in terms of “behavioral and environmental interventions” (Kales et al., 2014, p. 764). That is why this project will use the DICE -Approach (Figure 2) for further purposes.



**Figure 2 :** The DICE Approach (Kales et al., 2014, p. 764) Permission obtained from JOHN WILEY AND SONS© for (Kales et al., 2014, p. 764)

## **Methods**

The preceding chapters emphasized the need and evidence supports the purpose of this DNP project that aimed at the implementation of a psychiatric nurse-led consultation service in a 130-bed nursing home in the rural region of the Canton of Bern in Switzerland during a three-month period. As part of this process, systematic screening of newly admitted residents for signs of Depression using the GDS and Delirium (DOS) were implemented.

The QI-project adopts a mixed-method design with quantitative and qualitative elements and applies observational research approaches. A comprehensive document analysis was performed to evaluate improvement. Furthermore, individual interviews with on-site nursing staff were conducted.

### **Translational Framework**

This DNP project was conducted by the QI approach known as Plan-Do-Study-Act (PDSA -cycle). The PDSA is an iterative process that aims at continuous systematic improvement and supports change in practice (White et al., 2019). The PEPPA framework guided the steps for APN-role implementation by collecting baseline data of newly admitted residents. Trained on-site nursing staff assessed signs of delirium (Delirium Observation Scale [DOS]) and depression (Geriatric Depression Scale [GDS]) two weeks after admission.

The following sections will inform in more detail about the portions of Planning and Implementation Steps.

## **Plan**

The Department for Geriatric Psychiatry is affiliated with the acute hospital and responsible for the primary psychiatric care of the aging population in the Emmental region in the canton Bern. The Project leader is working as a Psychiatric Mental health Nurse Practitioner (PMHNP) in the psychiatric geriatric department of the regional hospital. The department supplies inpatient care and is supplemented by an outpatient clinic, which includes a memory clinic as well as community care services. Furthermore, the department manages the medical psychiatry consultation services in the acute hospital.

A cooperation agreement for psychiatric consultations was signed with a larger nursing home (130 beds) in the region some years ago. Since then, the geriatric psychiatrists have been supplying the consultations, which take place every two weeks in the facility. Diagnostic, therapeutic evaluations as well as pharmacological recommendations if needed are given to the primary care providers.

During the development of the geriatric clinic's new strategic orientation new care models should be reviewed. So, the introduction of an APN (PMHNP) for psychiatric consultations in long-term care was examined. The project was prepared in collaboration with the head physician of the geriatric psychiatry, involved medical staff of the geriatric psychiatry department and the management, and CNS in the nursing home.

The QI-project was planned over 3 months. Before implementation there was an education and training session for the nursing experts who are mainly responsible for the assessment process in the nursing home. There were two sessions of 2 hours in June and July 2022. The plan included different interventions that focused on newly admitted residents from first of August until last of November 2023 (Table 4).

**Table 4:** Planned Interventions of the DNP project during a three-month period in 2022

<b>Planned Interventions of the DNP project</b>
<ul style="list-style-type: none"> <li>• Training of the three on-site Clinical Nurse Specialists (CNS) with expertise in Geriatrics and Dementia on the application of DOS and GDS prior to Data-Collection (conducted in June and July 2023)</li> </ul>
<ul style="list-style-type: none"> <li>• Assessment of the DOS of new admissions within 72 hours of admission by the nursing staff that is present on-site during shift-times.</li> </ul>
<ul style="list-style-type: none"> <li>• GDS assessment within 14 days of admission conducted by Clinical Nurse Specialists.</li> </ul>
<ul style="list-style-type: none"> <li>• Reporting of scores above thresholds in DOS (&gt;3) and/or GDS (&gt;5) as part of the consultation process by the PMHNP every two weeks from August until November 2023</li> </ul>
<ul style="list-style-type: none"> <li>• Bi-weekly individual coaching and case discussion of residents with complex mental health conditions.</li> </ul>
<ul style="list-style-type: none"> <li>• Written recommendations after systematic mental health assessment by the PMHNP for any pharmacological, non-pharmacological or social intervention under supervision of the head of psychiatry.</li> </ul>
<ul style="list-style-type: none"> <li>• Screening of Electronic Health Records (EHR) for evaluation purposes.</li> </ul>
<ul style="list-style-type: none"> <li>• Interviews with the on-site CNS after completion of data collection</li> </ul>

## Population and Setting

This project was set up in one nursing home in the German speaking part of Switzerland in the rural region of the canton Bern. It is a 130-bed nursing home with six wards. The facility supplies 111 beds for short- and long-term care for adults aged over 65 years and includes a specialized dementia residential group for 19 residents.

The average level of Care in terms of the Resident Assessment Instrument (RAI) scored 6.6 in 2021 with an average bed occupancy of 95.9 % and increased to 7.3 in 2022 with 97.7% occupancy. In terms of new admissions, there was a decrease from 75 residents in 2021 to 54 residents in 2022. This is a sign of an increase in the number of residents with higher levels of care and more severe needs following the Covid pandemic.

The level of care regarding RAI is based on the care needs of the residents and is essential for the financing of care services (BESAQSys, 2022). The financing of care is regulated by the health insurance law. The insured person may be charged a maximum of CHF 23.00 per day. The remaining costs for care services are covered by the health insurance companies and the Canton of Bern (residual financier).

The degrees were figured out by the nursing staff with the help of standardized instruments (Minimum data Set [MDS]) and confirmed by the general practitioner (GP) and the home management. The classification is reviewed at least every six months (BESAQSys, 2022). The GP of the resident is always the case manager and must consent for any psychiatric consultation if nursing staff calls for added support.

In comparison to other institutions of the canton Bern it was noted that statistical measures in terms of the Minimum Data Set (MDS) showed high incidence of depression and mental health problems of the residents at the nursing home.

This should be addressed in this project as part of implementing the early assessments for depression and delirium in the nursing home. So, all newly admitted residents were included for screening and assessment of signs of depression and delirium in the first two weeks regardless of their prior stay at home, in an acute hospital or another care facility. This also included residents that were supposed to be re-admissions after time spent in acute medical or psychiatric hospitals due to complications (e.g.: falls, dehydration, hypertensive or diabetic crisis, hyperactive delirium, aggressive behavior) during their prior stay at the facility.

Exclusions were applied to those residents with severe dementia and impaired communication or were in palliative end of life situations. However, they had screening conducted by the on-site CNS for signs of Delirium with the DOS but were excluded for the GDS.

## **Implementation Steps**

Besides newly admitted residents, three CNS with expertise in geriatrics engaged in this project. Two of them were long-time experienced employees and one was a beginning ANP with a master's degree, who has been with the company for half a year. In preparation for the data collection, the CNS were trained on psychiatric comorbidities and implications for nursing care.

They received in-depth training in the use of the GDS and practiced its use on three voluntary test clients in advance. So, they gained theoretical and practical experiences. After that, a second training with the nursing experts of the nursing home followed two weeks later to discuss concerns, questions and barriers that occurred while conducting the GDS with test clients.

In August, the project leader in her function as PMHNP conducted the bi-weekly psychiatric consultations first together with the assistant physician of the geriatric psychiatric department. This collaboration supported the process of integration and acceptance and was beneficial for both practice sites. During the three-month period of the project there were a total of 12 planned meeting times of psychiatric consultations. For psychiatric consultation in the nursing home there are regular three hours reserved by the PHNMP and the assistant physician.

As a general practice, the needs for consultations are sent to the geriatric psychiatry department on a structured form up to 24 hours in advance. In urgent cases, residents are seen additionally the same day. The written applications are often not highly informative. Thus, the consultation first begins with a structured conversation with the caregivers on the ward using the DICE approach (Kales et al., 2014) as presented in the framework section. This means that the caregivers describe the context of the situation in which the behavior occurs, the accompanying circumstances, and the burden of distress on residents and staff.

They also mention the implications for the relatives or other residents and inform about the treatment plan by the GP. After that, the PMHNP and assistant physician investigate potential causes of the problematic behavior by checking medical conditions, pain, functional limitations, fear, sense of loss of control, or boredom. Further, social, physical, cultural, and environmental aspects are discussed. Finally, effects and expectations of caregivers are reflected. This step is followed by a visitation of the resident for a psychiatric assessment, collection of psychopathological findings and other supplementary indicated assessments.

After this comprehensive systematic assessment, the condition is evaluated, and individual therapy recommendations are made in collaboration with the nursing staff and GP. In this stage of Creation: written summaries are prepared for the care team and for the GP. Concerns and questions about the consulted residents are discussed with the head physician for geriatric psychiatry. All medication therapy recommendations are made under his supervision. Evaluation of effectiveness and improvements for residents and staff are a crucial part of this process that is included by the next consultation after two weeks.





## Budget and Resources

The budget planning predicted personnel resources and overall costs that were expected. This included costs on time afforded for staff training as well as extra time for supervision of the psychiatric consults. Furthermore, there were costs due to time spent in the car and the route to the long-term care facility, as well as costs for fuels. Additionally, there were infrastructural aspects to be considered about access to electronic health records at both practice sites. Support was given during regular working hours. All costs were covered by the geriatric psychiatric hospital and the 130-bed long-term care facility in the rural region of the canton Bern.

## Data Collection

Data collection started in August 2022, after IRB approval from UNCG and Swiss ethics was obtained. That is why written informed consent was not obtained.

**Table 5 :** Data Collection on quantitative measures

<b>Quantitative Measures - Patient data</b>
<ul style="list-style-type: none"> <li>• Sociodemographic, diagnostic, and clinical variables taken from EHR</li> </ul>
<ul style="list-style-type: none"> <li>• number of newly admitted residents to the nursing home between 08/01/2022 and 10/31/2022 aggregated by month.</li> </ul>
<ul style="list-style-type: none"> <li>• number of these residents with documented signs of depression, and delirium (GDS Initial Assessment Score, DOS-score)</li> </ul>
<ul style="list-style-type: none"> <li>• number of residents who were referred to the physician or CL psychiatrist due to complications or change in health conditions.</li> </ul>

**Table 6 : Data Collection on qualitative measures**

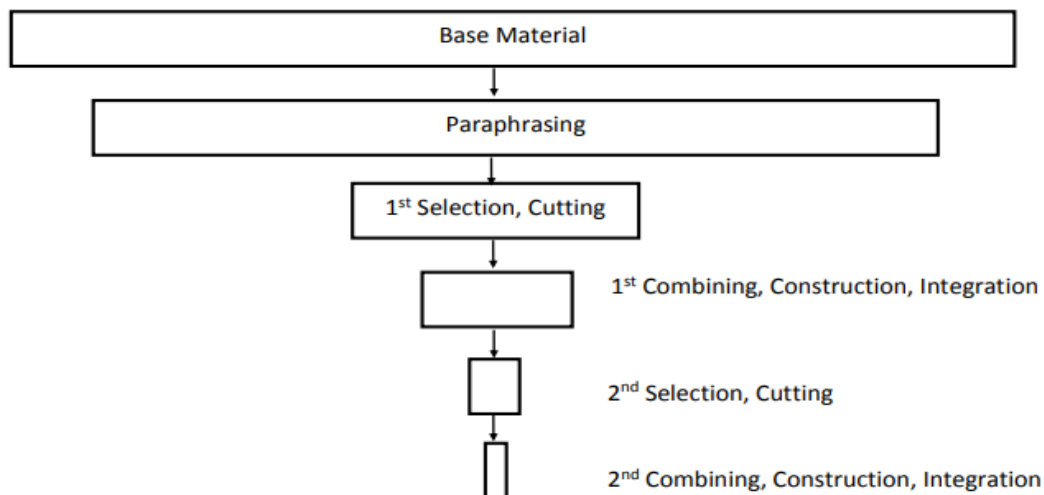
<b>Qualitative Measures – Data from Nursing Staff</b>
<ul style="list-style-type: none"> <li>• Socio-demographic data (e.g.: Age, gender, time of occupation in nursing home, time of experience in the field)</li> </ul>
<ul style="list-style-type: none"> <li>• Qualitative data on the interviews about their experiences in mental health assessment and their impressions about the psychiatric consultation provided by the PMHNP</li> </ul>

### **Data Analysis**

This QI project was limited to a baseline analysis of the sample of newly admitted residents and residents referred for psychiatric consultations using MS Excel. Socio-demographic, diagnostic and clinical variables were obtained from the electronic health records (EHR) as well as initial scores of the assessment tools for depression (GDS) and delirium (DOS). Data analyses presented numbers (n), percentages (%), median (with range) or mean with standard deviation (SD) of socio-demographic data of the residents, about frequencies and degrees of severity of delirium and depression symptoms at admission.

Based on the review of the EHR, the PI decided if documentation was congruent for the concerned residents. In this context, statements on perceived observations related to deliriant and/or depressive symptomatology were assessed in terms of conciseness, presentation, and frequency. Personal Interviews with CNS were conducted and transcribed verbatim for qualitative content analysis using summarizing techniques as introduced by Mayring (2014, p. 78).

Figure 3 illustrates the reductive approach while showing the stages of process for content analyses.



**Figure 3** : Summarizing techniques in qualitative content analysis (Mayring, 2014, p. 78)

## Results

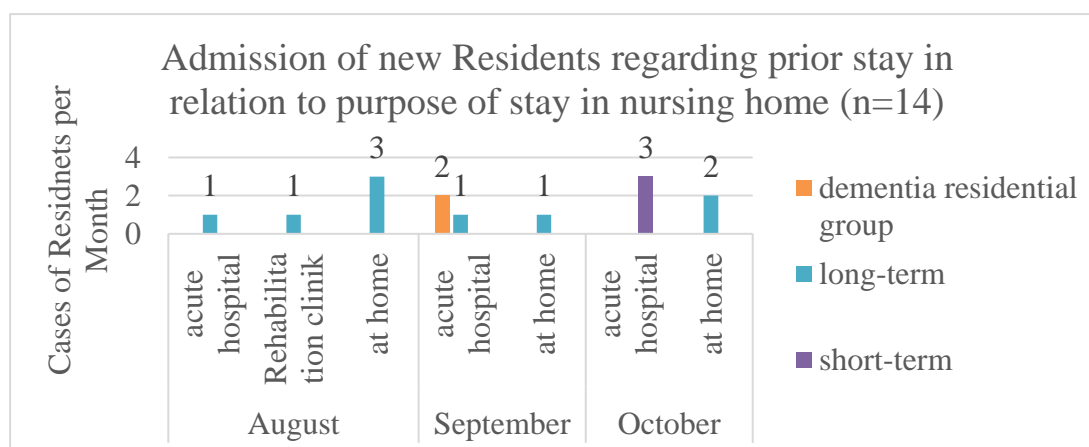
### Newly admitted Residents

During the three-month period of the QI project, there were a total of fourteen admissions to the nursing home. These were three short-term care placements and nine long-term care placements, as well as two placements in the nursing home's dementia residential group. Only two out of 14 newly admissions were called for referral by the psychiatric consultation. The mean age of the new admitted ten female (71.4%) and four male (28.6%) residents is 87.01 years (median = 88.2, with a range of 77.5 to 95.5 years). See Table 5 for a description of baseline characteristics with information about the stay before admission and whether any mental health condition was diagnosed by the GP in advance. Further, mean scores of GDS and DOS at admission are presented in relation to mean and SD of Age.

**Table 7 :** Sociodemographic and diagnostic characteristics of newly admitted Residents to Nursing Home between 08/2023 – 10/2023

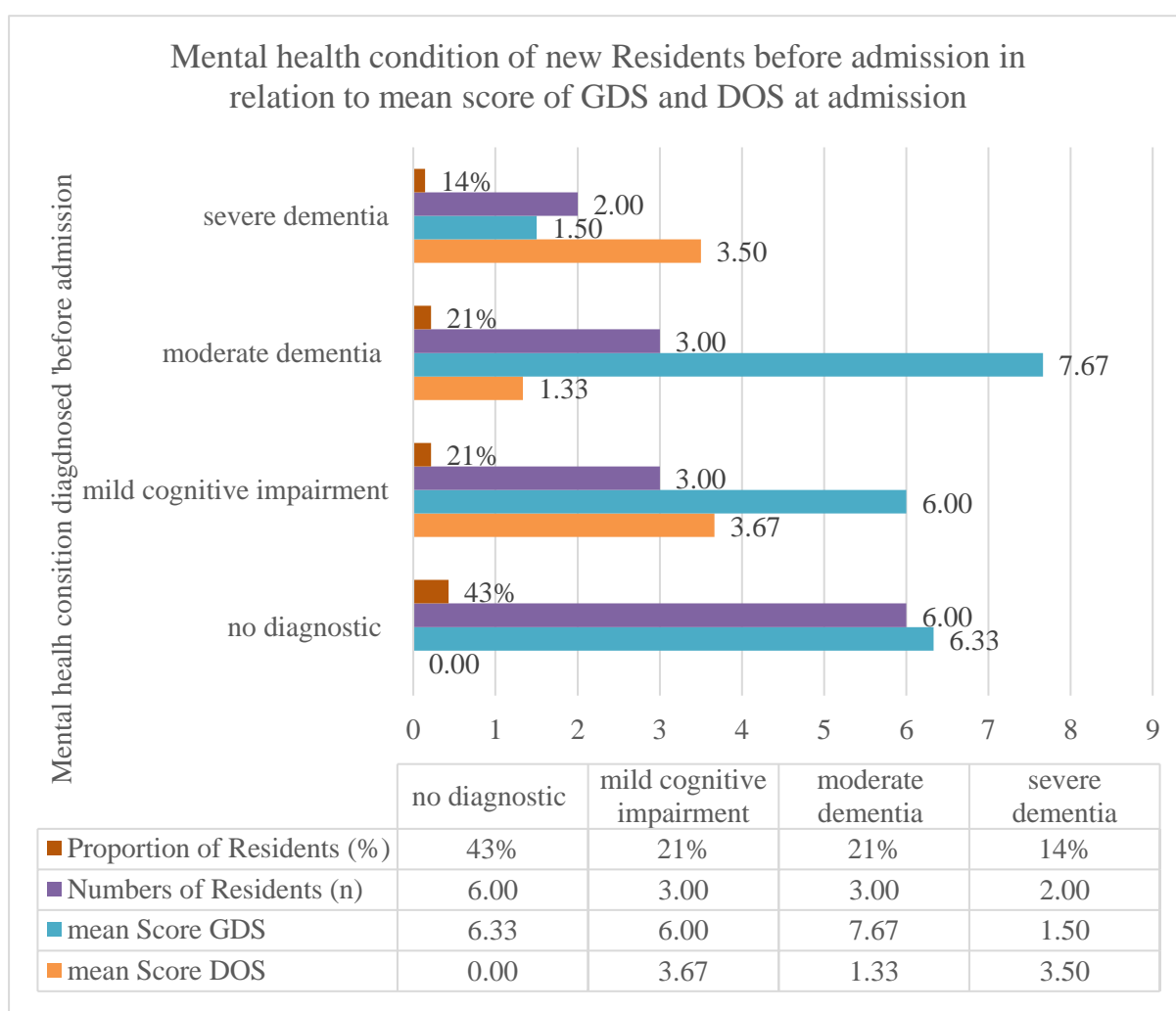
Stay before Admission - mental Health condition	Number of Cases	GDS (mean)	DOS (mean)	Age (mean)	Age (SD)
<b>acute hospital</b>	<b>7</b>	<b>5.57</b>	<b>2.00</b>	<b>87.01</b>	<b>5.61</b>
mild cognitive impairment	1	3.00	3.00	87.83	0.00
moderate dementia	2	10.00	2.00	93.18	1.23
n.d.	2	6.50	0.00	88.04	2.76
severe dementia	2	1.50	3.50	79.42	1.93
<b>at home</b>	<b>6</b>	<b>6.17</b>	<b>1.33</b>	<b>88.18</b>	<b>1.83</b>
mild cognitive impairment	2	7.50	4.00	87.92	0.56
moderate dementia	1	3.00	0.00	85.76	0.00
n.d.	3	6.33	0.00	89.17	1.87
<b>Rehabilitation clinic</b>	<b>1</b>	<b>6.00</b>	<b>0.00</b>	<b>89.19</b>	<b>0.00</b>
n.d.	1	6.00	0.00	89.19	0.00
<b>Results</b>	<b>14</b>	<b>5.86</b>	<b>1.57</b>	<b>87.67</b>	<b>4.20</b>

The following Figure 4 illustrates the admission of new residents in terms of prior stay in relation to the purpose of placement in the nursing home. More than fifty percent of new admissions entered the nursing home after treatment and care in an inpatient acute hospital. All others (6 out of 14) stayed in their private home before and received care by family caregivers or ambulatory care.



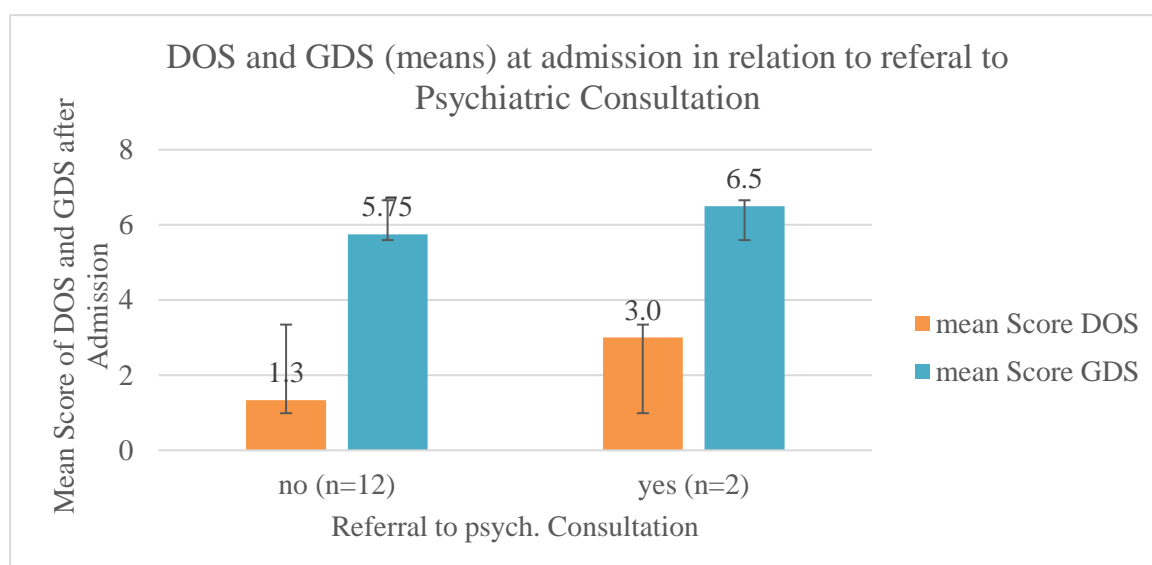
**Figure 4 :** Admission of new residents regarding prior stay and purpose of placement in nursing home

Regarding mental health conditions before admission there was only little information available in the accessible electronic health records (EHR). However, this diagnostic information is relevant for better understanding of the DOS and GDS results at admission (see Figure 5). Out of the 14 new residents 57% (n=8) were diagnosed with a moderate to severe cognitive decline due to any form of dementia. While for 43% (n=6) of the residents no information about the mental health state or cognitive functions was noted in the EPH.



**Figure 5** Mental Health condition of newly admitted residents in relation to mean Scores of GDS and DOS two weeks after admission to nursing home.

Only two out of 14 admissions were referred to a psychiatric consultation and further evaluation of treatment options. Regarding scores of GDS, 14 days after admission nearly 50% of the admitted showed GDS score above 5, which indicates signs of depression. For DOS scores at admission only one resident was referred although four more residents showed signs of delirium with a score above three which refers to the cut-off score. This means around 36% of new residents showed signs of delirium in the first two weeks after admission.



**Figure 6 :** DOS and GDS (Mean Score) at admission

### Summary of results for new Admissions

Using the structured systematic assessment (GDS) on new residents for depressive symptoms, it was found that approximately fifty percent had symptoms of depressive disorders in the first two weeks after admission. More than one-third (36%) of newly admitted residents were found to have signs of developing delirium during the first 72 hours of their stay in the nursing home when the DOS assessment was applied.

### Results of psychiatric consultation by PMHNP

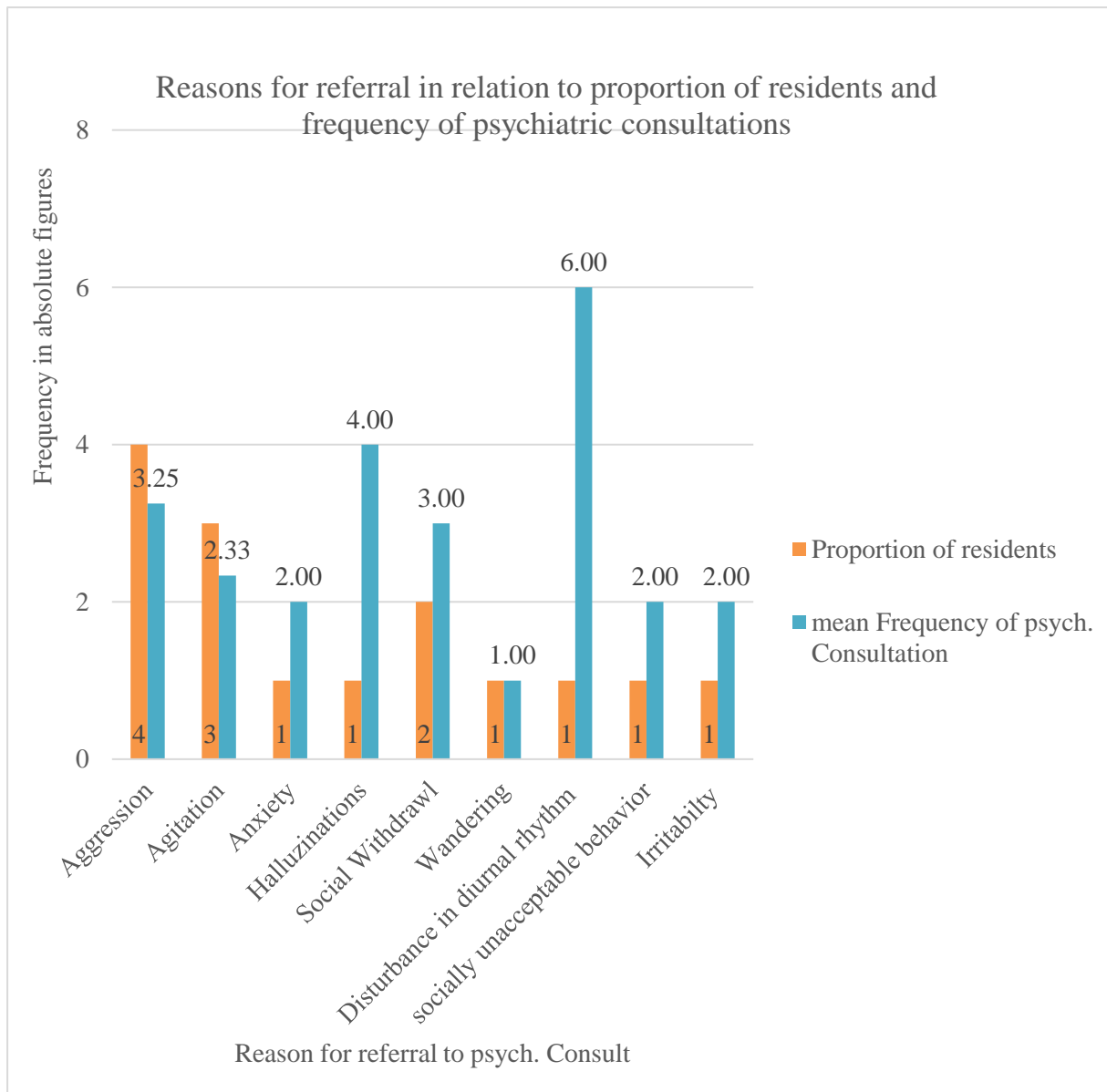
Besides the two referrals from newly admitted residents, there were 13 more applications in the expected time of the DNP projects period. In total 15 residents of the nursing home were seen for psychiatric consultations in three months. Therefore, seven were consulted due to behavioral problems while dementia progresses and three were seen because of signs for depressive disorder. Further, four residents developed hyperactive delirium and caused challenges due to aggressive behavior, and one was seen because of social disturbances with other residents. The following Table 8 shows the main reasons and causes for referral to psychiatric consultations.

**Table 8 : Reasons for Referral to psychiatric Consultations**

Reason for Referral	Cases (n)	Age (mean)	proportion of cases (%)	Number of Consultations	Number of Consultations (mean)
<b>Dementia</b>	<b>7</b>	<b>87.7</b>	<b>47%</b>	<b>19</b>	<b>2.7</b>
Aggression	2	88.5	13%	4	2.0
Agitation	2	86.5	13%	6	3.0
Anxiety	1	87.0	7%	2	2.0
Disturbance in day and night rhythm	1	98.0	7%	6	6.0
Wandering	1	79.0	7%	1	1.0
<b>Depression</b>	<b>3</b>	<b>85.7</b>	<b>20%</b>	<b>8</b>	<b>2.7</b>
Irritability	1	80.0	7%	2	2.0
Social Withdrawal	2	88.5	13%	6	3.0
<b>hyper-active Delirium</b>	<b>4</b>	<b>78.5</b>	<b>27%</b>	<b>14</b>	<b>3.5</b>
Aggression	2	79.5	13%	9	4.5
Agitation	1	70.0	7%	1	1.0
Hallucinations	1	85.0	7%	4	4.0
<b>mild cognitive Disorder</b>	<b>1</b>	<b>75.0</b>	<b>7%</b>	<b>2</b>	<b>2.0</b>
socially unacceptable behavior	1	75.0	7%	2	2.0
<b>Results</b>	<b>15</b>	<b>84</b>	<b>100%</b>	<b>43</b>	<b>2.9</b>



The results show a high usage of the consultations by only four out of fifteen residents with severe symptoms and complexity. Figure 7 below emphasizes the challenging behavioral symptoms that needed most attention.



**Figure 7:** Reasons for Referral regarding proportion of residents and need of mean psych. consultations

### Results of Documentation analysis (EPH)

Topics in EPH	Before Intervention	After Intervention by PMHNP
Description of resident's behavior	<ul style="list-style-type: none"> <li>• rather general statements about sequences of actions</li> <li>• generalizing residents' behavior</li> <li>• not highly informative</li> <li>• focus on drug delivery.</li> <li>• Dispensing of reserve medication partly not due to residents' needs (often for calming in case of frequent ringing)</li> </ul>	<ul style="list-style-type: none"> <li>• comprehensible description of behavior and actions</li> <li>• less generalized statements</li> <li>• focus on nursing procedures.</li> <li>• medication dispensing follows the needs of residents as other needs are addressed in advance.</li> </ul>
Managing Signs of Delirium	<ul style="list-style-type: none"> <li>• Rare use of the DOS assessment</li> <li>• Scarcely documentation of fluctuating course of the day</li> <li>• Causes are often overlooked.</li> <li>• Intensive workload for staff</li> <li>• Extensive use of psychotropic medications</li> </ul>	<ul style="list-style-type: none"> <li>• DOS Assessment is used without another request.</li> <li>• Causes are addressed.</li> <li>• Systematic daily Assessment of pain and anxiety in residents</li> <li>• Documentation helps assessment of the progression of the patient's condition.</li> <li>• Silent zones for sensory distraction are set up.</li> </ul>
Recognizing Signs of Depression	<ul style="list-style-type: none"> <li>• hardly any information about mood, activity, interests, or tasks</li> <li>• often information about sleep disturbances</li> <li>• occasionally statements on resistance to activities</li> <li>• occasionally statements on changes in eating behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Description of resident's mood during care activities performed.</li> <li>• Better description of resources used or activated.</li> <li>• Better understanding of signs of social withdrawal and anxiety</li> </ul>
Managing Progress of Dementia	<ul style="list-style-type: none"> <li>• hardly any statements about cognitive state and effects in everyday life</li> <li>• Focus on functional care.</li> <li>• Documentation of aggressive behavior towards staff without precise information about the triggering event</li> <li>• aggressive behavior often personal or situation-dependent</li> </ul>	<ul style="list-style-type: none"> <li>• In collaboration with dementia coach build up knowledge in the team</li> <li>• Developing preventive strategies and skills for de-escalation of aggressive behavior</li> </ul>

Since the information and case presentation was more comprehensive and focused, the average time needed per case decreased. From the start of this project, it took on average 30-40 minutes per case. By the end of the project, the average time per case review was 10-15 minutes.

### **Results of Interviews**

For evaluation purposes, the project leader (PL) conducted face-to-face interviews with two of the three Clinical Nurse Specialists (CNS) to assess the PMHNP psychiatric consultation intervention. Each of them was questioned for 30 minutes at the end of the projects in November 2022. The sociodemographic data are limited to three female Clinical Nurse Specialists (CNS). The mean age was 48.7 years (median 55; SD 8.3) and the mean years of experience was 25.7 years (median 28; SD 11.7). One of the CNSs had qualifications and training in dementia, and the other was working in a management role. The third CNS dropped out for personal reasons before interviewing could get started.

Following the qualitative content analyses using the summarizing approach by Mayring (2014) the PL extracted the following statements about the perceived effects of the nurse-led psychiatric consultations.

**Table 9 :** Effects perceived by CNS for psychiatric consultation by PMHNP.

Valuable service to the nursing home
Source of (emotional and professional) support for clinical nursing specialists
Increasing knowledge about Depression using the GDS
Better relationships of staff with residents due to increasing understanding of mental health conditions.

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Benefits for nursing teams due to improvement of psychiatric geriatric knowledge in terms of recognizing signs of depression and delirium.

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Benefits in developing skills in managing aggressive behavior.

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No difference in quality in comparison to assistant physician before

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Strengthens focus on nursing competencies.

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Emphasizes potential and gaps in the daily care routine.

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Recognizing Need for Training in de-escalation strategies and communication skills

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Process and practice of referral to geriatric psychiatric department needs improvement to meet the needs of nursing staff

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### **Identify barriers to success**

The project has faced obstacles on both practice sites. Consequently, it did not continue as planned or expected in all dimensions. As a result of a significant amount of staff turnover at the nursing home in September and October of 2022, the Project Leader needed a significant amount of effort to collect the data. Of the planned three CNSs involved, only two ended up taking part. The third, with a master's degree, who was to be a future multiplier, dropped out at short notice. The other two nurses focused on training new nurses and helped fill the remaining staffing needs. Consequently, attention to the project and the intention to improve the admission process in terms of systematic screening and reporting of DOS and GDS was not prioritized.

During this time, there were also reports of an increase in aggressive behavior among residents. Three of these incidents were serious, and the result was an increase in the number of staff injuries due to physical assaults by residents.

The shortage of staff has resulted in a considerable amount of strain on the staff. Not surprisingly, during this period, psychiatric consultations were mainly recorded, including requests for sedatives or transfers to other facilities. Thus, the reason for the psychiatric consultations due to the problematic behavior of the residents could often be traced back to the staffing situation and the ratio of nurses to patients.

### **Identify strengths to overcome the barriers**

Staffing at the nursing home has been addressed to its best ability by the home management. In addition, CNSs conducted training to improve staff's basic understanding of residents with dementia. But learning takes time and exposure, which is made possible when there is a role model in direct patient care on the unit.

Regarding the process of requesting a consult, the CNS tried to hold a resident conference beforehand. This was done to make sure that the nursing interventions had been used and that the possibilities had been exhausted in advance. It was possible to follow the progress of the residents and the developments in the nursing home thanks to the continuous consultations.

Thus, the two-week evaluation was helpful for the staff and the residential group leaders. They were specifically instructed on how to respond to the challenging behaviors. Furthermore, more sessions for supervision of the nursing staff are planned monthly starting from January 2023. In this regard, special training for managing aggressive behavior will be conducted by the PMHNP.

The results illustrate the increased need for adequate psychiatric care for nursing home residents as well as the added value of implementing the APN role for psychiatric consultations. In the following sections the findings are discussed in relation to the theoretical background, current evidence, and the translational framework.

## Discussion

### Improvements in Screening and Management of Depression

For new residents, the admission to the nursing home marks the final stage of life and is associated with emotional stress, which is expressed in depressive symptoms such as social withdrawal, hopelessness, anxiety, loss of interest and sleep disturbances. Consequently, the adjustment period needs time and patience. The support of the nursing staff is essential and can provide safety and orientation for the new resident to cope with the situation. Nevertheless, residents with depressive symptoms are rarely referred for further treatment or diagnostic evaluation.

Even in this project only one of the new residents and two of the long-time residents were referred for psychiatric consultation. This underlines the gap of not recognized and untreated depressive elderly in nursing homes ((FOPH), 2019). Based on the documentation and the interviews, it was clear that these residents were somehow noticed before. Often the withdrawal into the personal living room, the disinterest in activities or occupation, and the increasing irritability is not further questioned. In the present cases, the CNS and family members were significantly involved in the initiation of the consultation.

These residents received help from a psychiatric assessment followed by pharmacological and non-pharmacological treatment recommendations. Medication recommendations to start antidepressant medication were sent to the GP. In addition, nursing interventions were expanded and included assessment of biography, activating resources and brief daily conversation. It also included guided walks, pastoral care and therapy dogs to help. However, given the staffing situation in the nursing home, this is not surprising that these residents were overlooked.

Those residents who do not stand out due to disruptive behavior receive routine care that is intended for service provision according to the RAI assessment.

### **Improvements in Screening and Management of Delirium**

The prevalence of delirium is in concordance to the Swiss study by von Gunten and Mosimann (2010) with 40% as well as the results of the Meta-analyses up to 38% by Wilson et al. (2020). But none of the newly admitted residents received prompt follow up assessment by a psychiatric consultant. It is likely that although DOS assessments are performed, there is a lack of awareness of the relevance of early warning signs. Thus, it seems not surprising that residents are scheduled for a psychiatric consultation when the clinical presentation of delirious symptoms are pronounced.

During the bi-weekly consultations, the importance of early warning signs based on the DOS was repeatedly addressed. In addition, the CNS were actively involved in instructing the staff in the use of the DOS. The positive effect was clear in the EPH of the residents, in which the effects of the preventive measures were documented. Those measures were tailored and aligned with the NICE Guideline (NICE, 2019). This emphasizes the need for theoretical and practical training in detecting early signs of delirium as recommended (NICE, 2023; Urfer Dettwiler et al., 2022).

### **Improvements in Management of BPSD**

Considering the reasons that led to the request for psychiatric consultations, it is noticeable that the problematic behaviors (e.g.: agitation and aggression, hallucinations, anxiety, and irritability) predominated, which can be attributed to BPSD.

These behaviors have a significant impact on the workload, are time and cost-consuming and a burden for the nursing staff. In addition, they are perceived as disruptive to fellow residents that often react confused or anxious. Similar experiences were reported at Klöppel et al. (2020). These persistent burdens are a vicious cycle within the tense staffing situation. Thus, it is not unexpected that the nursing staff's turnover is increasing in nursing homes (Creapeau et al., 2022). So, more must be done to address these challenges earlier. Educational and Training programs are promising (Klöppel et al., 2020; Urfer Dettwiler et al., 2022).

### **Improvements for nursing home**

The first steps of implementation of the PMHNP were perceived positively by the nursing staff and the geriatric psychiatric department. Regarding the nine-step approach of the PEPPA framework (Bryant-Lukosius et al., 2016) this project was able to collect baseline data and identified patient related outcomes, as well as barriers on the practice sites.

However, the process of role implementation takes time. Before the DNP project started, it is notable that referrals were completed with drug recommendations that were prescribed by the assistant physician for the purpose of the general practitioner. The nursing staff did not receive more support. With the introduction of the PMHNP the strictly medical perspective changed to a more comprehensive case understanding.

The application of the DICE Approach was an appropriate theoretical framework (Kales et al., 2014). The consultations were participative with the care providers and the resident. Interventions were discussed as part of the nursing process and optional resources were revised.



The nurses appreciated the interaction and confirmed an increase in learning about symptoms, causes and risk factors of delirium, depression and BPSD. They had advantages from the coaching, support, and continuity of bi-weekly attendance. These results are in concordance to the recent findings of the qualitative Swiss study conducted by Fuchs et al. (2022).

### **Need for further improvement of referral process to Psychiatric Consultations**

As seen in the interviews with the CNS as well as on supervision with the head physician, the discussion has turned to the question of how the application process for psychiatric consultations can be improved as it affords too many resources and leaves questions about future financial issues. In total there were fifteen cases that caused 43 consultations during the three-month period of the project.

There was an increase in the number of consultations, which often revealed nursing problems and did not necessarily require the assessment of a physician. It appeared that consultations were announced without consulting the home physician in advance. This underlines the critical views as also reported in (Lücke & Müller, 2018). This consideration needs to be addressed because the psychiatric consultation services are primarily supplied for the general practitioner (GP). The GPs serves as case managers of the residents and are important stakeholders that usually adopt the provided recommendations.

The same accounts for the personnel resources of the Geriatric Psychiatric Department (GPD) associated with the consultations. After every consultation of any case in the nursing home written forms are provided with brief assessment and therapy recommendations. They are reviewed and signed by the head physician of the GPD. Any changes in psychopharmacological medication are strongly supervised.

But what will a GP do with recommendations for nursing care? For evaluation purposes a survey at the GPs would be informative about their needs. And how are the financial gaps to be balanced? The service provided by PMHNP is not fully reimbursed under the current Swiss payment system. Legislation regarding APNs' own scope of practice and service delivery in Switzerland is still in its beginnings (Swiss Nursing Association [SBK], 2021).

As staff shortage is present at both practice sites, the process of implementing a new model of care needs time and resources. These factors present some of the observed barriers on the implementation of the PMHNP role. However, the expected improvement in the future is recognizable by the presented results as well as evidence from national findings (Hasemann et al., 2016; Leuenberger et al., 2017; Urfer Dettwiler et al., 2022) and internationally studies (Fischer et al., 2011; Orth et al., 2019; Wilson et al., 2019).

### **Limitations**

The time for Data collection was limited to three months. But the proportion of new admissions is hard to predict. In the future a longer duration should be performed to balance these aspects. The analyses of the EPH were done by the PI alone. So, any kind of bias cannot be excluded. With the support of more assistant resources this limitation should be addressed and considered on future planning.

Although adjustments in the planning (about extent of assessment tools and training efforts) were made, the change of improvement by implementing a PMHNP for psychiatric consultations was recognizable as revealed by the study results. The evaluation is not finished yet.

To date there is a collection of baseline data that is promising to show an effect. These baseline data are helpful as they highlight the population that will benefit by a new model of care, and this supports the strong need for this role. The steps of this DNP project so far were crucial before continuing on implementation (Bryant-Lukosius et al., 2016).

### **Conclusion**

This QI project has proved the importance of mental health assessment for depression and delirium at admissions in nursing home residents aged over 80 years. Further, the added value on mental health conditions, individualized care, and educational benefits for the nursing staff was presented by the implementation of the PMHNP role for bi-weekly psychiatric consultations under supervision of the head physician of the GPD.

Multimodal pharmacological and nonpharmacological interventions contribute to residents' mental health state after an average of three consultations per case. But residents admitted to psychiatric consultations were already in an acute or serious state of mental health distress. This supports the need for ongoing training. Individualized recommendations for managing challenges perceived by behavioral and psychological signs of dementia (BPSD) in nursing home residents are helpful if handed out to nursing staff.

For the implementation of preventive strategies as well the ongoing training efforts, an APN with specialization is needed on site at the nursing home. However, a cost-benefit analysis should be considered for this purpose.

### **Recommendation for future practice**

More attention should be placed on recognizing depressive and delirious symptoms in new admissions in the future. This means that the screening of new residents, especially those without pre-existing health information, should be assessed for signs of depression using the GDS. Psychiatric consultation is recommended if GDS Score above > 5. Newly admitted residents transferred from acute hospital settings are at considerable risk for developing any form of delirium. These residents should have standardized DOS evaluation at least for the first three days of their stay in the nursing home to prevent adverse outcomes.

Additionally, theoretical basics about the causes and risk factors for depression and delirium as well as preventive measures need to be educated and trained. Ongoing training is needed to strengthen the nursing knowledge and skills in coping and communication with patients that present challenging behavior in daily care. For safety reasons, special attention should be drawn on preventive strategies for de-escalation of aggressive behavior. The discussion with the nursing home management and a session with the leaders is already planned.

For further role implementation of the PMHNP in psychiatric consultation the barriers need to be addressed. One major step will be the revision of the referral process in general and the forms to highlight the implications for GPs and the implications for nursing staff. Finally, it is important to consider the needs of the GPs as well as the needs of the nursing staff at the nursing home with respect to scarce resources at the geriatric psychiatric department. This implies the need for the nursing home to set up an own ANP who is specialized for the care of residents with dementia, depression, and delirium. This approach will support the ongoing training and coaching needs of the nursing staff. Further, preventive measures can promptly be evaluated and adapted.

### **Dissemination of project results**

To ensure that the topic of this DNP project will be recognized after completion, the results will be shared with the faculty at UNCG and the stakeholders in Switzerland. In this context the conclusions and recommendations will be communicated, discussed, and can contribute to sustainable improvement at the practice sites. In this respect, it is also important to thank the stakeholders for the participation and support for the project. For an overview of the planned dissemination related activities, a table is provided in the appendix.

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## Appendix C: Literature Search Strategy

Pubmed: (("geriatric psychiatry"[All Fields]) AND ("nursing home"[All Fields])) AND ("assessment"[All Fields]); Filter: dt. /Engl. / publication < 10 years = Results 21; The same strategy applies to other Databases – CINAHL, PsycInfo; Google scholar.

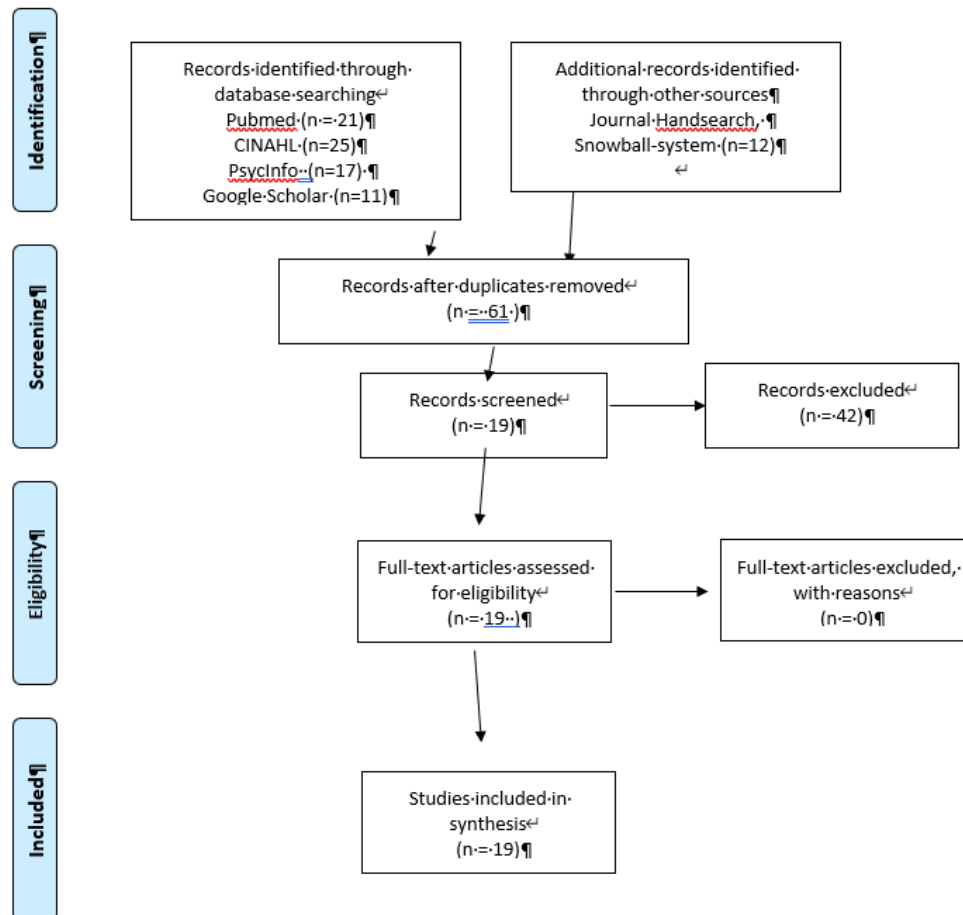
**Table 10 : Search Terms in Literature Search Strategy**

	<b>Search Terms</b>	<b>added Search Terms</b>
<b>Population</b>	Adults aged over 65 years with Mental health disorders (Depression, Dementia, Delirium)	Elderly, Old age
<b>Setting</b>	Long-term care facilities OR nursing homes	Geriatrics
<b>Intervention</b>	<ul style="list-style-type: none"> <li>• psychiatric consultation</li> <li>• Assessment</li> <li>• Screening</li> <li>• Preventive strategy</li> <li>• Consultation service</li> <li>• Advanced Nursing Practice</li> </ul>	shared decision making, clinical reasoning Interprofessional collaboration
<b>Outcome</b>	<ul style="list-style-type: none"> <li>• Improvement of mental health assessment and Treatment</li> <li>• Early detection of mental health problems in long term care</li> <li>• Improvement of patient safety</li> <li>• Improvement of nursing home quality</li> </ul>	

## Appendix D: Prisma Flow Diagram



PRISMA-2009-Flow-Diagram



## Appendix E: The Delirium Observation Screening (DOS)

### Appendix A. The DOS Scale.

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The patient

---

1. Dozes off during conversation or activities
  2. Is easily distracted by stimuli from the environment
  3. Maintains attention to conversation or action
  4. Does not finish question or answer
  5. Gives answers that do not fit the question
  6. Reacts slowly to instructions
  7. Thinks to be somewhere else
  8. Knows which part of the day it is
  9. Remembers recent events
  10. Is picking, disorderly, restless
  11. Pulls IV tubes, feeding tubes, catheters etc.
  12. Is easily or suddenly emotional (frightened, angry, irritated)
  13. Sees/hears things which are not there
- 

Note. Never = 0 points; Sometimes or always = 1 point; Items 3, 8, and 9 are rated in reverse. A total score of three or more points indicate a delirium.

## Appendix F: Geriatric Depression Scale (GDS, Short Form)

### Geriatric Depression Scale (Short Form)

Patient's Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Choose the best answer for how you felt over the past week. Note: when asking the patient to complete the form, provide the self-rated form (included on the following page).

No.	Question	Answer	Score
1.	Are you basically satisfied with your life?	Yes / No	
2.	Have you dropped many of your activities and interests?	Yes / No	
3.	Do you feel that your life is empty?	Yes / No	
4.	Do you often get bored?	Yes / No	
5.	Are you in good spirits most of the time?	Yes / No	
6.	Are you afraid that something bad is going to happen to you?	Yes / No	
7.	Do you feel happy most of the time?	Yes / No	
8.	Do you often feel helpless?	Yes / No	
9.	Do you prefer to stay at home, rather than going out and doing new things?	Yes / No	
10.	Do you feel you have more problems with memory than most people?	Yes / No	
11.	Do you think it is wonderful to be alive?	Yes / No	
12.	Do you feel pretty worthless the way you are now?	Yes / No	
13.	Do you feel full of energy?	Yes / No	
14.	Do you feel that your situation is hopeless?	Yes / No	
15.	Do you think that most people are better off than you are?	Yes / No	
TOTAL			

(Sheikh & Yesavage, 1986)

#### **Scoring:**

Answers indicating depression are in bold and italicized; score one point for each one selected. A score of 0 to 5 is normal. A score greater than 5 suggests depression.

#### **Sources:**

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### Appendix G: Overview of Clinical Factors

**Table 11** Comparison of the clinical features of delirium, mild cognitive impairment, dementia and depression – Overview based on Table by Boltz et al. (2020, pp. 120-121).

<b>Clinical Feature</b>	<b>Delirium</b>	<b>Mild cognitive Impairment</b>	<b>Dementia</b>	<b>Depression</b>
<b>Onset</b>	Sudden/abrupt depends on cause; often at twilight but can occur at any time of day	Insidious/slow; often unrecognized, as impairment does not interfere with daily activities	Insidious/slow but recognizable, as impairment interferes with daily activities; depends on cause	Often coincides with major life changes; often abrupt, but can be gradual
<b>Course</b>	Short; diurnal fluctuations in symptoms; worse at night, in darkness, and on awakening	Long; no diurnal effects, symptoms can improve, stabilize, or progress, yet relatively stable over time, may see deficits with increased stress	Long; no diurnal effects, symptoms progressive yet relatively stable over time, may see deficits with increased stress	Diurnal effects, typically worse in the morning; situational fluctuations in symptoms, but less than that with delirium
<b>Progression</b>	Abrupt	Variable: possibly absent or slow but uneven	Slow but uneven	Variable, rapid, or slow, but generally even
<b>Duration</b>	Several hours to less than 1 month; longer if unrecognized and untreated (sometimes untreatable) and can be persistent or lead to dementia	Months to years	Months to years	At least 2 weeks, can be several months to years
<b>Alertness</b>	Fluctuates from stuporous to hypervigilant	Normal	Normal -possibly disturbed in advanced dementia	Often disturbed

<b>Attention</b>	Inattentive, easily distractible; the person cannot focus on an idea or task. Often considered a “hallmark sign of delirium”	Generally normal; if attention is affected, the person might have difficulties with complex- attention tasks (e.g., complex-problem solving)	Generally normal, depending on the cause; shifting from one (rather simple) attention task to another can be problematic	Often disturbed
<b>Orientation</b>	Generally impaired; disoriented to time and place, should not be disoriented to person	Generally normal	Generally disturbed, impaired in advanced dementia	Selective disorientation
<b>Memory</b>	Recent and immediate impairment, unable to recall events of hospitalization and current illness, forgetful, unable to recall instructions	If memory is affected, mild declines in memory (misplacing things, repeating questions, having troubles keeping track of dates/ appointments)	Major declines in memory (unable to recall recent events)	Selective or “patchy” impairment, “islands” of intact memory, recall better if cued, evaluation often difficult because of low motivation
<b>Thinking</b>	Disorganized; rambling, irrelevant, and incoherent conversation; unclear or illogical flow of ideas	If thinking is disturbed, changes in language (e.g., word-finding difficulties) and visuospatial function (e.g., slow to identify roadway hazards) might occur	Difficulty with abstraction, thoughts impoverished; judgment impaired	Intact but with themes of hopelessness, helplessness, or self-depreciation
<b>Perception</b>	Perceptual disturbances, such as illusions and visual and auditory hallucinations; misperceptions of common people and objects common	Intact	Misperceptions usually absent	Intact; delusions and hallucinations absent except in severe cases



<b>Psychomotor behavior</b>	Variable; hypoactive, hyperactive, and mixed	Normal	Normal, may have apraxia	Variable; psychomotor retardation or agitation
<b>Associated features</b>	Variable affective changes; symptoms of autonomic hypo-hyperarousal	The person might try to conceal or laugh off cognitive deficits	Affect tends to be superficial, inappropriate; tries to conceal deficits in intellect; personality changes, aphasia, agnosia may be present; often lacks insight	Affect depressed; dysphoric mood, exaggerated and detailed complaints; preoccupied with personal thoughts; insight present; verbal elaboration; somatic complaints, poor hygiene, and neglect of self
<b>Assessment</b>	Distracted from tasks, does not remember instructions, frequent error without notice	Although a person or relative might report failings, these are often difficult to differentiate from declines adherent to aging. Neuropsychological tests have good norms to detect the difference	Failings highlighted by family, frequent "near miss" answers, struggles with tests, significant effort to find a suitable reply, frequent requests for feedback on performance	Failings highlighted by individual; frequent "don't know" answers; little effort; often gives up; indifferent toward test; does not care or try to find answer

## Appendix H: The PEPPA framework

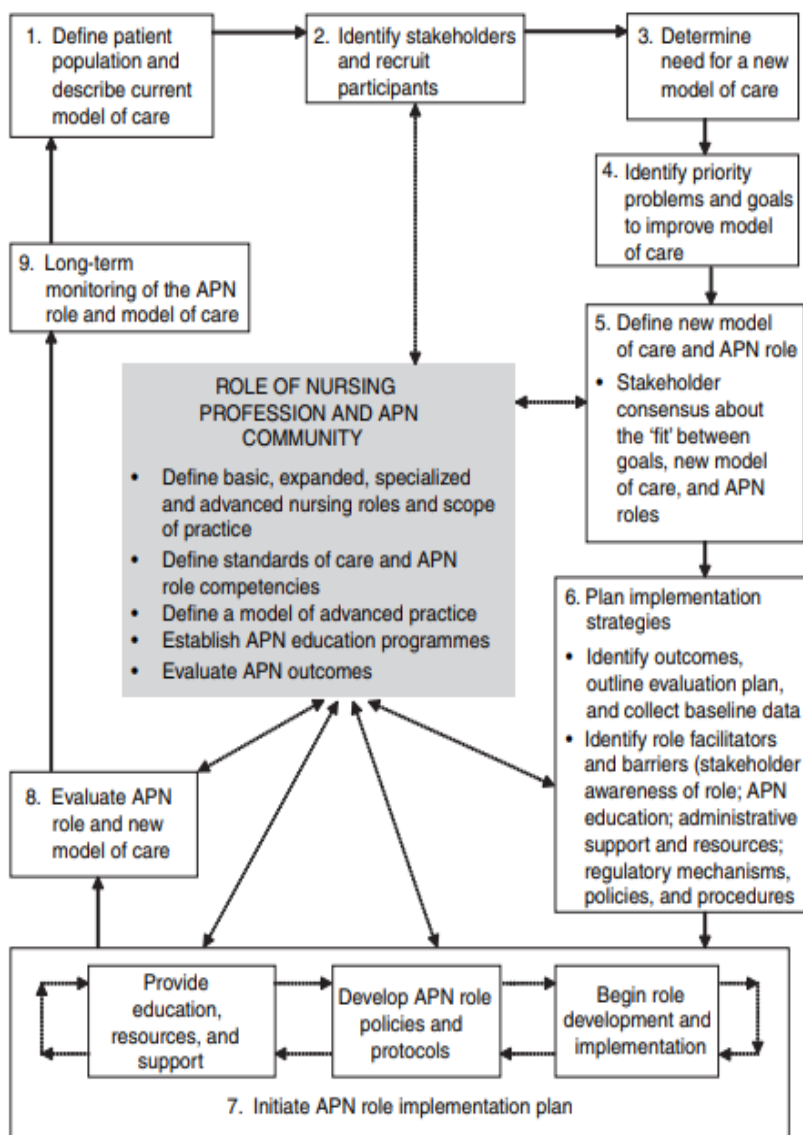


Figure 1 The PEPPA framework: a participatory, evidence-based, patient-focused process for advanced practice nursing (APN) role development, implementation, and evaluation (adapted from Spitzer 1978, Dunn & Nicklin 1995, Mitchell-DiCenso *et al.* 1996).

Figure 8 A framework for the introduction and evaluation of advanced practice nursing roles (Bryant-Lukosius *et al.*, 2016, p. 532)

## Appendix I: Planned Dissemination Activities

**Table 12 :** Planned Dissemination activities

<b>Nr.</b>	<b>Activities of Dissemination</b>	<b>Date</b>	<b>Location</b>	<b>Format</b>	<b>Target audience</b>	<b>Special preparation</b>
<b>1</b>	Poster presentation at UNCG Poster Day	Apr 23	Online via Zoom	Poster	Faculty of UNCG and fellow Students	Zoom Link via UNCG
<b>2</b>	Share findings with project site I	May 23	in Person meeting	Poster	Focused review on results with Management at Nursing Home and CNS	Acknowledgement of participation with gift
<b>3</b>	Share findings with project site I	May 23	in presence at Nursing Home	Power Point Presentation	Stakeholders at Nursing Home; including management and nursing staff	Technical Equipment at practice site
<b>4</b>	Share findings with project site II	June 23	presentation of DNP project and findings at Geriatric Psychiatry Department (GPD)	Power Point Presentation	Stakeholders at GPD including management and nursing staff	Organizing location
<b>5</b>	Share findings with project site I and II	June 23	Newsletter - mailing in GPD and nursing Home	summary - fact sheet of findings	Staff at Nursing Home and GPD	mailing in cooperation with marketing department of both companies