



# Caring for People with Alzheimer's Disease Who Show Defensive Behaviours: Part 1: Four Essential Pieces of Nursing Knowledge

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## Abstract

When caring for people living with Alzheimer's disease (AD) and showing aggressive behaviours, nurses must perform a knowledge-based nursing practice to better understand the people's needs and support them. This article aims to present a structure for the knowledge essential for nurses caring for people living with Alzheimer's disease who show defensive behaviours. People living with AD some times show defensive behaviours that have disastrous consequences for them, their family members, the other residents, and the formal caregivers. Rather than considering these behaviours as being aggressive and disruptive, nurses must understand that they are protective and defensive. Because of the important role that nurses have in the care of people living with AD, they must possess specific knowledge. This discursive paper is based on the literature of defensive behaviours and integrates the Fundamentals of Care Framework. We use Kim's perspective regarding the knowledge-based practice and the knowledge-use in nursing practice. Several dimensions that must be considered for the nursing practice for the elderly living with AD are introduced. This permits to present a clinical gerontological nursing process centred on the relationship with the person living with AD and their family. Moreover, a mid-paradigm for nursing care of these people is introduced. Then, essential nursing knowledge for the care of people living with AD is presented in four parts, which are 1) Characteristics of AD, 2) Goals of the behaviours, 3) Contributing factors, and 4) Ecobiopsychosocial and pharmacological interventions related to the person and family's needs. The specific structure of knowledge permits to precisely identify pieces of knowledge nurses should possess and nursing students should learn in order to take care of people living with AD and their families.

## Keywords

Dementia care, Fundamental care, Nursing theory, Family-Centred care, Aggression management, Non-Pharmacological method

## List of Abbreviations

AD: Alzheimer's disease, FOC: Fundamentals of Care

## Aim

This article aims to present a structure for the knowledge essential for nurses and nursing students caring for people living with Alzheimer's disease who show defensive behaviours.

## Background

People living with Alzheimer's disease (AD) sometimes show intriguing behaviours that family members and caregivers have difficulty understanding. These behaviours are often called behavioural and psychological symptoms of dementia. However, instead of seeing all behaviours shown by people with AD as symptoms of the disease, it is very important to consider most of their behaviours as a legitimate response to stimuli [1,2]. That is why some authors would rather call them responsive behaviours [3,4].

Under certain circumstances, responsive behaviours may have a verbally or physically aggressive tone. It is complicated to present the prevalence of aggressive behaviours shown

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by people living with AD because these behaviours are most often mixed with agitation behaviours [5], which is unsatisfactory [6-8]. Despite this, some authors state that 25 to 50% of people living with AD will show aggressive behaviours during the course of their disease [9-14]. With agitation, aggressive behaviours are described as being the most frequent behaviours shown during a behavioural crisis by people living with AD [15]. Regarding residents in nursing homes, some authors assert that the prevalence of aggressive behaviours can be as high as 84% [16,17]. These various results demonstrate that aggressive behaviours shown by people living with AD are a relatively frequent phenomenon in different health institutions.

## Relational, Protective, and Defensive Behaviours

Some authors explain that aggressive behaviours may be reactive, as an answer to a perceived threat, or proactive, as a planned behaviour anticipating a reward [7,18,19]. Because of the effects of Alzheimer's disease on cognitive and executive functions, people living with AD rarely show proactive aggressive behaviours [8]. Therefore, for this article, and considering their context of emergence and their purpose, aggressive behaviours are understood in two ways: 1) As relational behaviours, and 2) As protective and defensive behaviours. The aggressive behaviours are relational because they always occur during an interaction between a person living with AD and another person acting as a formal carer, a family member, another resident, a visitor, or even an object. From another point of view, the aggressive behaviours are protective and defensive. Indeed, these behaviours are the way the person living with AD tries to communicate compromised needs (e.g. hunger, thirst, pain) or attempts to protect and defend her or himself against something perceived as threatening and potentially dangerous [7,8,20,21,22]. For this article and for the sake of simplicity, relational behaviours as well as protective and defensive behaviours shown by people living with AD will be generally called "defensive behaviours".

Unfortunately, the defensive behaviours are often misunderstood by family, formal caregivers, and nursing students, and are interpreted as dangerous and disruptive behaviours solely caused by the AD. Consequently, restraint and isolation measures are sometimes used. For example, chemical restraint could be used to reduce the frequency and intensity of defensive behaviours [23]. Additionally, physical restraint or isolation could be used to limit the impact of those defensive behaviours. In most cases, these measures do not target the causes of the behaviours and can even have a devastating impact on people with AD's health, well-being, and quality of life.

Obviously, the defensive behaviours shown by people living with AD may also have disastrous consequences for other people, such as fear and injuries. In nursing homes, formal caregivers are the first people to experience such bad consequences. For example, aggressive behaviours play an important role in stress and in both the subjective and objective nursing burdens [24]. When facing aggressive behaviours, formal caregivers may feel exhausted, resigned, hopeless, incompetent, and unable to perform the care tasks [12,25].

The most frequent victims of these physically aggressive behaviours are professional carers and other patients. The results of a Swiss study demonstrate that among 3919 formal caregivers of 155 nursing homes [26], 2584 (66%) reported verbally aggressive behaviours, 1629 (42%) physical ones, and 600 (15%) sexual ones. A study in a geriatric psychiatry unit demonstrates that 82% of the aggressive incidents observed were directed at nurses, regardless of whether they were women or men [14]. Somehow, family members and people who are unknown to the person living with AD are also affected by these behaviours [13]. It is important to note that aggressive events may also occur between residents and may have disastrous consequences [27-29].

Thus, it is important for carers who care for people living with AD who show responsive behaviours, sometimes called behavioural symptoms of dementia, to understand that these behaviours are linked to some contributing factors, to thoroughly identify these factors, and to intervene on them [20,23,30-32]. Now, since nurses working in nursing homes must be able to assess the person's needs and determine judicious interventions, they have an essential contribution to make. However, since these situations are extremely complex and relational, nurses must be guided to be able to carry out a complete and relevant clinical process.

## Discursive Paper

This discursive paper is intended to propose a structure for the knowledge required by all nurses and nursing students who care for people living with AD and showing defensive behaviours regardless of practice areas or clinical settings. This paper is for nurse educators, internship supervisors, counselors, or managers, as well as nursing students.

Because of the extent of this work, we publish it in two distinct and complementary parts. The first part presents a structure of four essential pieces of nursing knowledge for the care of people living with AD who show defensive behaviours. The second part will present a situation-specific version of the Fundamentals of Care Practice Process centred on people living with AD who show defensive behaviours. In part two, a clinical scenario will illustrate the relevance of using this adapted version of the Fundamentals of Care Practice Process.

First, Kim's perspective of knowledge-based and knowledge-use nursing practice will be introduced. This will allow the essential tools of nursing practice and clinical process to be presented and to explain our starting point. Moreover, we will be able to present our proposal about nursing care of people living with AD and showing defensive behaviours from a mid-paradigmatic perspective. Second, the four essential pieces of nursing knowledge for the care of people showing defensive behaviours will be presented. Finally, following a brief conclusion, the relevance of our proposal to clinical practice will be described. The practice process of our proposal will be presented in the second part of the article.

## Knowledge-Based Nursing Practice and Knowledge-Use in Nursing Practice

For this paper, Kim's perspective [33,34] regarding the

knowledge-based practice and the knowledge-use in nursing practice will be used. This choice is linked to Kim's normative model for nursing practice "...specifying how and what nursing practice ought to be, rather than what it is" [34].

To begin, the perspective of knowledge-based nursing will be briefly presented. Next, some explanations about the processes of knowledge synthesis and use in practice will be given. Once these foundations have been introduced, the knowledge-based practice for people living with AD who show defensive behaviours will be presented through two levels of knowledge, namely, general, and situation-specific.

## Knowledge-based nursing

For Kim [34], knowledge-based nursing practice integrates the content and process. The content refers to the necessary knowledge that should guide a nursing practice. The process refers to the use of this knowledge in practice. The knowledge used in nursing practice is related to theory, not just to evidence from research [33,34].

For Kim [34], each discipline has its own public knowledge that needs to be synthesized into private knowledge that nurses can use in practice. Therefore, a three-step process of knowledge synthesis must be done. The knowledge synthesis is carried out based on knowledge from the public and private domains. The public domain knowledge is related to theory development, research, consensus development, standards formulation, and maxims and models [34]. The private domain knowledge is related to personal clinical experiences [34]. The first step of the knowledge synthesis process is the selection of new knowledge by the nurse. This selection process is linked to knowledge readiness. The second step is a critical assessment process. The nurse discriminates between knowledge available. This step is influenced by analytical skills, personal knowledge, and supporting mechanisms (scientific journals, programs, etc.) related to the facts that the nurse believes that the knowledge is "valuable, essential, meaningful, and important for practice" [34]. This critical assessment process is linked to the value of the knowledge. The third step represents the integration of public knowledge with knowledge coming from each nurse's personal clinical experience to create the personal knowledge used in practice. This step refers to the reflexive attitude of the nurse. The nurse takes a conscious position. This integration process is linked to the relevance, utility, and fittingness of the knowledge.

Furthermore, based on Kim's proposal for knowledge-based nursing practice [33,34], we affirm that nurses must have access to public knowledge which is essential to care for individuals with AD who show defensive behaviours. That is why we will present a summary of the public domain knowledge on the subject of defensive behaviours, as well as that of the practice process which helps nurses to synthesise it as private knowledge with the aim of using it in their practice.

Now that the knowledge-based nursing has been presented, the knowledge-based practice for people living with AD who show defensive behaviours can be described.

## Knowledge-based practice for people living with Alzheimer's showing defensive behaviours

The use of theories in clinical nursing practice is presented based on two different roles of theory [33]. The first role of theories is "...to formulate orientations, attitudes, and commitments to the fundamental features of nursing practice" [33]. This foundational role of knowledge refers to the first level and is related to the general and un-specified role of nursing. The second way to use theories in nursing practice is related to a selective choice of theories "...to address each clinical situation to understand and explain it, to arrive at nursing approaches responding to the requirements of the clinical situation, and to carry out nursing care" [33]. This instrumental role of knowledge refers to the second level and is related to the particularistic and situation-specific role of nursing.

To identify the content of the needed theoretical knowledge base, we searched for and gathered a body of data from our clinical, academic, and research activities. We also conducted a research of theoretical and empirical data on databases (CINAHL, Medline, PsycINFO, Ageline, Web of Science). After having reviewed each piece of data, we gathered topics and created different categories of knowledge. Our approach was iterative and required both inductive and deductive processes of thinking.

The main components of each of the two roles of theories for nursing practice with people living with AD who show defensive behaviours are presented below.

### General level of knowledge for elderly nursing practice

At a general level of knowledge, we can find some propositions about the knowledge that nurses caring for the elderly should possess. Some of these propositions have been considered below in order to build our proposal.

Since we are speaking of nursing practice, it is important to view the knowledge from a nursing perspective. For this, we can use the well-known nursing metaparadigm formed using the concepts of human being, health, environment, and nursing [35]. When speaking of the concept of a human being, we must consider person-centred care [36-38]. Formal caregivers need to be informed about person-centred perspectives to be able to implement helpful strategies to prevent defensive behaviours or manage them as gently as possible [12,16]. Additionally, we must specify that it is not only the person living with AD, but also his or her family who must be considered [39-41]. That means that nursing care for people living with AD should be addressed from the perspective of family nursing [42]. Moreover, because of the relational context in which defensive behaviours occur, we also must consider purposefully the relationship-centred care proposals that are highly relevant for nursing and care for people living with AD [43-53]. The relationship-centred approach to care leads to "the development of meaningful relationships among persons living with dementia, their family partners in care, and the formal helping system" [54]. In fact, it is possible to say that the person and family dimensions are integrated into the relationship-centred perspective of care, since this

one includes everyone involved in care, i.e., the resident, family members, and formal carers [55]. Thus, it is also possible to state that the Fundamentals of Care Framework is related to a relationship-centred care perspective as it shapes the dimensions of the person, family, formal carers, and their relationships [56,57].

### Fundamentals of care framework

The Fundamentals of Care (FOC) Framework was developed using an inductive approach by International Learning Collaborative members in 2013 [58]. The FOC Framework has been modified over the years [56,59]. It provides nurses and other health professionals with a practical, evidence-based approach to addressing the Fundamental Care for people in care. The FOC Framework focuses on care activities that help meet people's fundamental needs and contribute to their well-being, health, recovery, and safety.

The FOC Framework is organized around three dimensions describing what a high-quality delivery of fundamental care means. The first dimension is the relationship established between the nurse and the person along with his or her family. This dimension is central to the FOC Framework and is a prerequisite to the other dimensions. The nurse's commitment to take care of the person is expressed through five elements, i.e., trust, focus, anticipate, know, and evaluate. The second dimension is the integration of care which relates to the person's physical, psychosocial, and relational needs. The third dimension is the context of care which relates to what is enabling the delivery of fundamental care. A practice process allowing the FOC Framework to be used in practice exists. This practice process will be presented in the second part of the article.

The general level of knowledge integrates nursing models. The Johnson's Model is very useful when considering defensive behaviours.

### Nursing model: Johnson's behavioral system Model

Dorothy Johnson's Behavioral System Model appears to be particularly interesting for the phenomena of defensive behaviours. According to Johnson's theory, the individual is a behavioural system whose overall purpose is to maintain his or her integrity as a whole and to manage relationships with the environment [60]. Johnson's model comes in seven subsystems including an aggressive/protective subsystem. For Fawcett and De Santo-Madeya [35], the Behavioral System Model is located in the reciprocal interaction world view which is quite relevant for the article perspective.

For Johnson [60], behaviour is a set of actions and observable traits developed through maturation, experience, and learning. Behaviours are governed by physical, biological, psychological, and social factors [35,60]. The behavioural system is composed of seven distinct, open, and interrelated subsystems, including the aggressive-protective subsystem. With respect to the aggressive-protective subsystem, Johnson drew upon the ethological propositions of Lorenz and Feshbach, who conceive of this type of behaviour as being related to protection and survival [60]. The aggressive-protective subsystem will be one of the central concepts selected as a piece

of essential nursing knowledge for the care of people living with AD who show defensive behaviours.

### Gerontological nursing knowledge

In this general level of knowledge, we have also retained other sources of reference and inspiration. For example, the Canadian Association of Schools of Nursing [61] identifies three competencies for Bachelor's students. The first competency is to "collaborate with the older person and their family to promote health and well-being, foster resilience and adaptation to change, optimize function, and prevent illness and injury" [61]. This first competency presents 11 indicators including a therapeutic relationship with the older person and their family, collaborating with the older person, their family, and health care team to develop and implement a care plan, fostering positive and supportive relationships between the older person and others, and identifying actual or potential mistreatment/abuse to respond appropriately. The second competency is to "collaborate with the older person and family to optimize well-being in the context of complex health conditions which can be acute or chronic" [61]. This second competency also presents 11 indicators including conducting a holistic and comprehensive assessment, using critical thinking in monitoring, supporting older people and their family in navigating through transitions of care, and providing informational, emotional, and instrumental support to the family caregiver. The third competency is to "collaborate with the older person and family to provide competent, respectful, and culturally sensitive palliative and end-of-life care" [61]. This third competency presents eight indicators, including supporting older people in determining goals of care and advocating for the right to self-determination of care, including decision-making related to treatments.

Some years ago, the Canadian Gerontological Nursing Association [62] identified some competencies and practice standards for the nursing care of the elderly. These are organized into six categories which are related to physiological health, optimizing functional health, responsive care, relationship care, health system, and safety and security. Some years later, the Canadian Gerontological Nursing Association [63] presented their propositions in the following six categories: Relational care, ethical care, evidence-informed care, aesthetic and artful care, safe care, and socio-politically engaged care. These categories of knowledge can be very useful to consider from an organizational point of view, for example, in defining standards of practice for nurses working with the elderly and in describing job profiles.

Moreover, since 2010, the American Nurses Association has proposed six standards of practice for Gerontological Nursing [40], which are: 1) Assessment; 2) Diagnosis; 3) Outcome identification; 4) Planning; 5) Implementation, and 6) Evaluation. The fifth standard is divided into three parts as: 5a) Coordination of care, 5b) Health teaching and health promotion, and 5c) Consultation. These standards are related to the essential clinical steps that every nurse should take to assess an elderly person's health condition.

As we can see, the general level of knowledge for elderly nursing practice involves a variety of essential data related

to nursing gerontological practice. These data permit understanding of the main principles guiding this practice. These general level components are useful in describing the gerontological nursing role and skills, and guide description of roles and deployment of nursing education. However, these general level data cannot be used directly in daily nursing practice and are not specific to the people living with AD who show defensive behaviours. Therefore, it is essential to care about guidelines and experts’ recommendations.

### Guidelines and experts’ recommendations

Related to the care of people living with AD who show defensive behaviours, we can also explore the guidelines related to reactive behaviours, or more broadly, to the behavioural and psychological symptoms of dementia. Many guidelines exist in many different countries [64-71]. Additionally, some experts’ recommendations have been made concerning the clinical process and required steps which must be realized when a person living with AD shows reactive behaviours. These experts’ recommendations are often presented in an acronym or algorithm method [23,72-77] or in a multi-step process [31,78,79]. Some methods are more specifically proposed for reactive behaviours shown in the context of bodily care [80-84].

In summary, it is possible to recapitulate the main points of

these guidelines and experts’ recommendations in five stages. The description of the following stages is related to the nurse but, obviously, the interprofessional team is involved in each of them according to the person’s needs. First, an in-depth assessment process must be realized. Second, this assessment process mainly serves to look for and find the factors contributing to the expression of defensive behaviours. Because these factors are related to the person, other people, and the environment, the assessment process must consider all three of them. Third, interventions must target the contributing factors. Nonpharmacological interventions are the first choice, and as they address the person, other people, and the environment, these interventions are ecobiopsychosocial [23]. Pharmacological interventions also target contributing factors such as pain, infection, or depression. Restraining measures are used as a last resort when ecobiopsychosocial interventions do not produce sufficient results. Such measures may also be used in situations of danger to the person or others, or in the case of severe psychological distress. Fourth, the interventions have to be put into practice carefully by the formal carers and family members. Finally, the intervention effects and results are measured and described.

### Nursing gerontological clinical process

To close the point of knowledge-based nursing practice for people living with AD who show defensive behaviours,

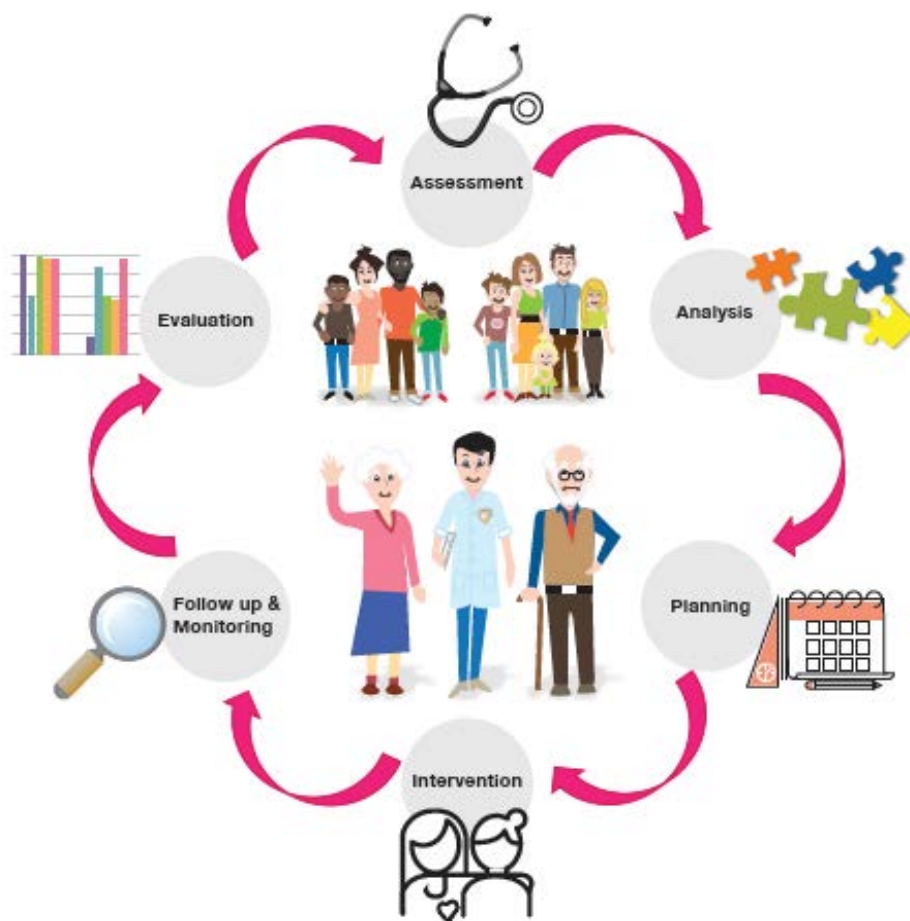


Figure 1: Steps of the nursing gerontological clinical process.

we recommend the nursing gerontological clinical process be carried out by nurses caring for these people and their families. Based on the aforementioned general level of knowledge data, we identify six components for the nursing gerontological clinical process (Figure 1). Inspired by the relationship-centred care perspective as well as related to the specific needs of family members of those living with AD [85,86], and because of the family’s desire to be involved in the life and care of their parent and partner with the formal carers [41,87-90], we decided to carefully integrate the family dimension into our work.

After having considered these general level pieces of knowledge, we have worked on the second level of knowledge, i.e., situation-specific knowledge [33].

**Situation-specific level of knowledge for nursing care of people living with Alzheimer’s who show defensive behaviours**

From a knowledge-used-in-practice perspective and based on the particularistic and situation-specific standpoint, we can state that nursing theories guide nursing actions [33]. The nursing care of people living with AD who show defensive behaviours relates to multiple and complex data and theories. For now, four essential pieces of nursing knowledge have been identified.

The first essential piece of nursing knowledge allows the characteristics and impact of Alzheimer’s disease to be described. The second essential piece of nursing knowledge is related to the understanding of defensive behaviours goals and utility. The third essential piece of nursing knowledge is centred on the causes of defensive behaviours, i.e., the fac-

tors contributing to the expression of these behaviours. Finally, the fourth essential piece of nursing knowledge is related to interventions that nurses can implement. These interventions are ecobiopsychosocial, and pharmacological.

Based on Reed’s proposal on mid-paradigm for knowledge development [91], and on Litzzen, Langley, et Grant’s proposal [92], we suggest a prismatic mid-paradigm for nursing care for people living with AD who show defensive behaviours. This prismatic mid-paradigm illustrates the main points of this article (Figure 2). Firstly, at a general level of knowledge, two outer circles surround the phenomenon of defensive behaviours. The pink outermost circle represents the four concepts of the nursing metaparadigm that Johnson’s model defined. The intermediate blue circle integrates the previously introduced six steps of the clinical nursing process. At the specific level of knowledge, the green inner circle shows the essential pieces of knowledge for the care of people living with AD who show defensive behaviours. Because we have chosen a relationship-centred approach of care and because of the context of defensive behaviours, many people are involved in our proposal. We can identify who are involved: The older persons (resident), their family, other residents living in the unit, the nurse, nursing staff, and nursing students.

**Essential Nursing Knowledge for the Care of People Living with Alzheimer’s Who Show defensive Behaviours**

The essential nursing knowledge for the care of people living with Alzheimer’s who show defensive behaviours is presented in four parts, which are 1) Characteristics of AD; 2) Goals of the behaviours; 3) Factors contributing to the ex-

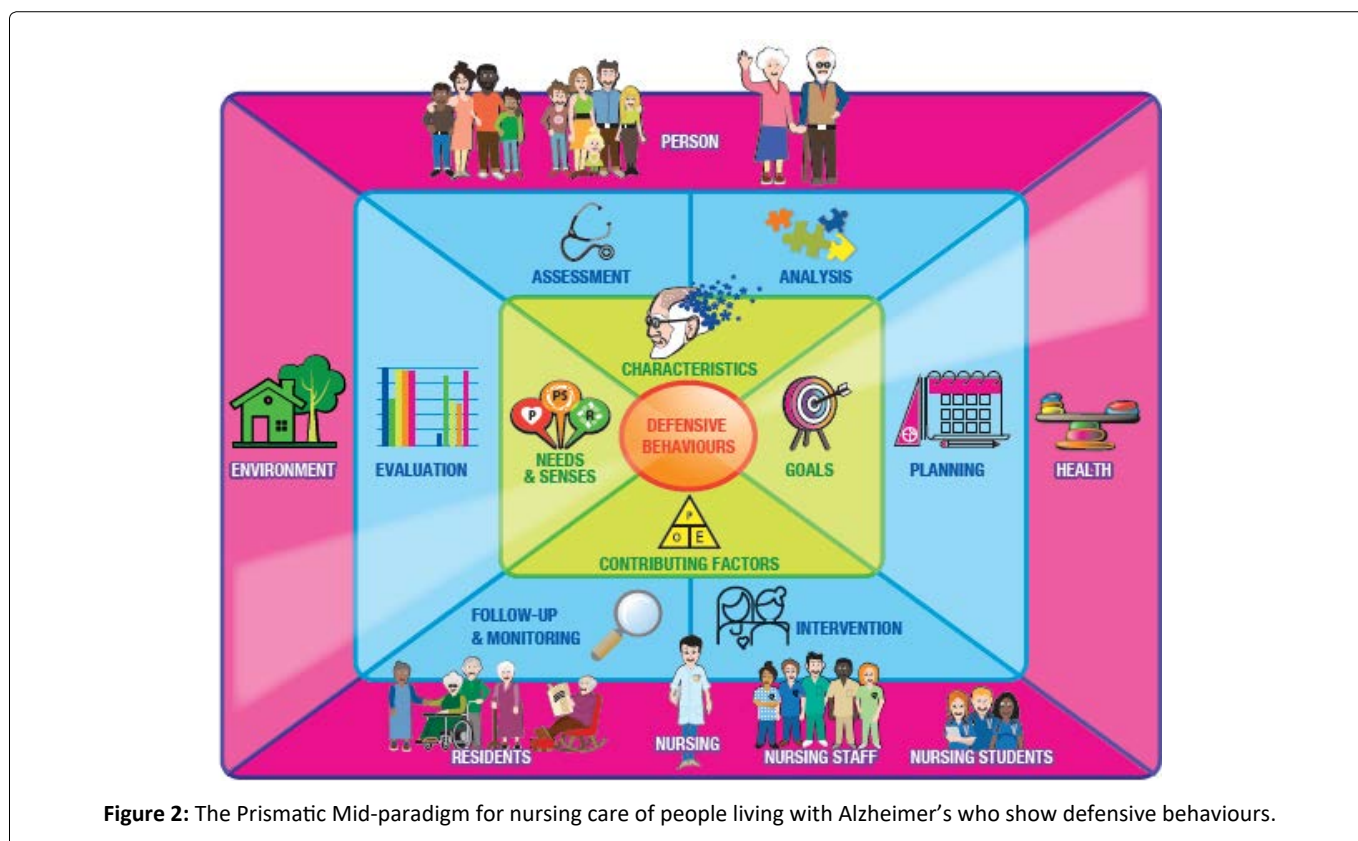


Figure 2: The Prismatic Mid-paradigm for nursing care of people living with Alzheimer’s who show defensive behaviours.

pression of defensive behaviours, and 4) Ecobiopsychosocial and pharmacological interventions related to the person and family's needs. The main points concerning these essential pieces of knowledge are referred to in a general way rather than described in detail.

This article does not aim to replace a training course on the topics discussed.

## First essential piece of nursing knowledge: Characteristics of AD

The first essential piece of nursing knowledge is related to the very characteristics of AD. The nurse must possess some essential pieces of knowledge to be able to understand the needs of a person living with AD.

### Alzheimer's symptoms

Naturally, the nurse has to know that the main symptoms of AD are cognitive, i.e., memory, judgment, and reasoning, but also that the disease will have effects on physical, functional, and self-care abilities, as well as cause changes in emotions, moods, behaviours and communication abilities [93].

The nurse must also know well what are generally called the A's of AD. According to different authors [19,74,94,95], we can find between four and 11 Alzheimer's A's. The first seven A's relate to the neurocognitive effects of the disease, namely, amnesia, aphasia, apraxia, agnosia, anosognosia, altered perception, and attention. For these seven A's, the nurse must not only know what each word means, but also the impact on the everyday life of people living with AD, as well as ways to help them. The last four A's are connected to the behavioural and psychological symptoms, and are apathy, aggression, agitation, and anxiety. As for all the disease's symptoms, the nurse must be able to recognize them, know what factors can contribute to their onset, and which interventions are appropriate. Ideally, the nurse should promote strategies to prevent these phenomena.

### Losses and language

Nurses must understand that people living with AD will experience successive and irretrievable losses. These losses are related to the stage of the disease: The more the disease progresses, the bigger the losses will be, and the bigger the need for help will be. Family members will also experience a process of loss and mourning related not just to their loved one, but also to their projects, habits, and roles.

The language of the person living with AD will become more and more affected. This means that the person will have more and more difficulties in clearly communicating his or her thoughts, feelings, and needs. The verbal language will deteriorate and be replaced by vocal and physical language. Vocal language is meaningful and can be related to the person's needs [96,97]. Physical language is related to all meaningful behaviours shown by the person, for example, grimaces, gestures, movements, and body postures or stiffness. Whether verbal, vocal or physical, defensive behaviours are always meaningful behaviours.

### Retrogenesis model

It is very important that nurses know that the evolution of AD is usually described with the Retrogenesis Model in seven consecutive stages, from one to seven [98,99,100]. The Retrogenesis Model can helpfully explain the person's general functional capacities and losses, emotional and behavioural changes, as well as activities and care needs.

These seven stages can be organized in three levels of severity, i.e., mild, moderate, and severe [101], or in more inclusive stages described as being early, middle, late, or end-of-life [102]. Because the seven stages reverse "...the order of functional acquisition in normal human development" [100], it is possible to link the function, which is lost because of AD, with the approximate developmental age at which it is acquired [103,104]. Linking the stage of AD to the developmental age should not be used to infantilize the person, but rather to illustrate the level of help the person needs in their daily life [103,105].

In summary, the Retrogenesis Model is helpful to better understand the person's needs and behaviours, to better adapt the environment, and to better plan daily activities and care.

### Validation® approach

Nurses working with older adults living with AD should also be interested in Naomi Feil's proposals regarding the Validation® Approach [106]. This approach helps the person communicate his or her needs and feelings, and helps the family or formal caregiver to better understand intriguing behaviours shown by people living with AD. For example, when a 93-year-old woman wants to go home to take care of her young children who need her, or when an 88-year-old man says he has to go to work at 5:00 in the morning or his boss won't be happy, caregivers might feel confused. Using temporal and spatial reorientation techniques is useless and counterproductive and can even create anxiety or catastrophic reactions. Using the Validation® approach, however, will be helpful and soothing.

**Be in the same place where, when, and how the person is:** The Retrogenesis Model and the Validation® approach lead nurses to consider the person's capacities, needs, and emotions, and help him or her to better understand the meaning of behaviours. This also guides nurses to always consider the perspective of the person's life history, which is indispensable for the nursing care of persons with AD. In fact, we can say it is fundamental that the nurse be able to encounter the person where, when, and how he or she is. That means that nurses must consider the person's capacities of doing and communicating, the level of space-time where the person is at, what he or she is experiencing, and the emotion and needs that are expressed.

Speaking of essential nursing knowledge for the care of people living with AD who show defensive behaviours, nurses must understand the impact of stimuli on the person, and the person's threat perception and fear response.

### Stimuli, threat perception, and fear response

As explained by GR Hall and Buckwalter [107], people

living with AD present a reduction of the stress threshold. This phenomenon is in relation with the person's decreased capacity to manage internal or external stimuli according to their quantity and quality. This means that, placed in a situation where there are too many stimuli, the person living with AD may show reactive behaviours which can be defensive. For example, we can imagine a woman with severe stage (7b) AD who receives help for self-care. Imagine this woman feels pain, is cold, and gets afraid because one of the two carers is male. Imagine too that there is a lot of noise from the television and from discussion between the two caregivers. Therefore, unable to clearly explain what she is experiencing, this woman may express protective and defensive behaviours such as grab hold of her clothes, cry for help, reject caregivers, or try to bite them. Regarding the behaviours of the person, nurses must be mindful of the different internal and external stimuli in a way to promote pleasant stimuli in an adequate quantity according to the person's abilities, attention span, and needs.

It's also important to understand that, according to neurobiological principles, people living with AD have special sensitivity in terms of threat perception and fear response [108]. This means that the person may feel threatened by events considered trivial and respond to them with fearful behaviours that appear exaggerated.

#### **Other neurocognitive diseases**

Finally, nurses must also know of other neurocognitive diseases because of their specific characteristics. This permits the nurse to understand differences, well adapt his or her clinical process, and better evaluate the person's own situation. In the context of defensive behaviours, we can particularly think about people living with behavioural variant frontotemporal disease. Because of their illness, these people will be more likely to express impulsive, uninhibited, and inappropriate social behaviours. It is possible to say that specificities will change the way of intervening since effective interventions for people living with AD may not always be recommended for these individuals. We restate that this paper is centred on people living with AD, even if some explanations and recommendations could be useful for the care of people living with another neurocognitive disease such as frontotemporal disease.

After having presented the characteristics of AD, we can now examine the goals of the defensive behaviours.

### **Second essential piece of nursing knowledge: Goals of defensive behaviours**

The second essential piece of nursing knowledge is to do with understanding the goals of defensive behaviours. Understanding the purpose of these behaviours is necessary to target answer the causes and propose efficient interventions which respond to the needs of people living with AD. As explained previously, aggressive behaviours should be considered as being relational, protective, and defensive [22,109]. This perspective is linked to different authors' proposals.

Firstly, it is important to consider all behaviours shown by people living with AD as legitimate because they are used to

convey a message and are therefore meaningful [1,2].

Secondly, we can speak about a Theoretical Model for Aggression shown by people living with AD, proposed by Lanza [110]. Several theories based on the origins of aggression inspired her model. Lanza presents two major origins for aggression, which can be innate, or related to interactions with the environment. These factors may combine to create a potential for aggression that is then expressed verbally or non-verbally. The potential for aggression may also be unspoken and latent. This model explains well the unavoidable presence of factors for an expression of aggressiveness to happen. Ryden [111] used Lanza's model as a model to create a new instrument for measuring aggressive behaviours. Three years later, she took the same model for a study with the purpose to determine the nature, frequency, and context of aggressive behaviours shown by residents in a nursing home [112].

Thirdly, we can recall Johnson's theory (1980) which explains that behaviours have goals and functions, including protection and defence. We can also present Talerico's theoretical proposal for aggressive/protective behaviours in persons with AD based on Johnson's model [113]. This proposal has contributed to changing the way nurses view defensive behaviours shown by people with AD, and to a better understanding of their meaning and usefulness [114].

Fourthly, it is essential to mention the escalation phenomenon [115,116]. People living with AD may express verbal, vocal, or physical behaviours to communicate that they are uncomfortable or disagree with something that is said or done to them. If these behaviours are not understood or respected by the caregiver, the person may then seek to express their feelings more strongly. If this is still not understood or respected, then the person may adopt protective and defensive behaviours. This phenomenon of escalation needs to be understood as it allows for early identification of meaningful behaviours and promotes a response that is appropriate to the person's difficult experience. This proposal is particularly interesting in the context of personal care.

Fifthly, it is interesting to consider the nursing symptom theories. For example, from Dodd, et al. [117], we can understand that the behavioural response expressed by an individual is relative to the experienced symptoms and the perception and assessment of those symptoms. If the symptoms are negative or perceived as threatening to the integrity, the person may show defensive behaviours.

Once having understood the goal of defensive behaviours, it is essential to consider the factors contributing to the expression of these behaviours.

### **Third essential piece of nursing knowledge: Factors contributing to the expression of defensive behaviours**

The third essential piece of nursing knowledge is centred on the understanding of the causes contributing to the expression of defensive behaviours. As said by Holst and Skär, et al. [12], formal caregivers need to be able to identify factors triggering defensive behaviours.



**Table 1:** Contextual factors of defensive behaviours.

Background level	Factors
Neurological	Neurocognitive disease and stage (mild and severe) - Brain region involved (frontotemporal area) Neurotransmitter imbalance Circadian rhythm deterioration- Insomnia Motor ability Disinhibition
Cognitive	Attention and memory Visuo-spatial ability Language skills and impairments Perceptual and sensory skills and impairments
General health status	General health - Medical conditions: Delirium, pain, or psychosis Functional ability (dependency) Affective state – Depression- Psychological distress
Psychosocial	Age (older) - Gender (male) Education Occupation Premorbid personality type History of psychosocial stress - Antecedents of aggressive behaviours- Behavioural response to stress

Indeed, as currently reported [10,20,23,32,73,118,119], responsive behaviours, and therefore aggressive ones, are related to different factors linked to the person, others, and the environment. Many studies describe these different factors [5,13-15,17,26-29,79,110,114,120-133].

While considering factors contributing to defensive behaviours, we can refer to Algase and collaborators’ now classic need-driven dementia-compromised behaviour theory [20]. This theory explains that compromised needs may lead the person to show reactive behaviours, for example, defensive ones. These compromised needs are related to contextual and proximal factors. Based on this theory and other theoretical propositions and research data [10,19,23,30,32,52,72,75,94,107,110,130,134,135], we can present the factors contributing to the expression of defensive behaviours. As previously explained, this article does not intend to replace nursing teaching on reactive and defensive behaviours shown by people living with AD. Therefore, the factors are simply cited without being explained. Cited references allow for location of sources, and those interested in obtaining more information can write to the first author.

The first few factors are related to the general portrait of the person, namely, the neurological, cognitive, and psychosocial factors, as well as their general health status. These background factors shape a person’s basic risk profile. They are presented in the table (Table 1).

The second set of factors are related to the proximal factors namely, the personal environment as well as those relative to the social and physical environment. Considering the personal needs, we integrated Boettcher’s needs related to the violent behaviour prevention [134]. We also added organisational factors. All these proximal factors generally precipitate the behaviour. They are presented in the table below (Table 2).

### Rigorous clinical process

As mentioned previously, nurses who care for persons living with AD who show defensive behaviours must complete a rigorous clinical process (Figure 1). Many proposals exist on the nursing clinical process to be conducted when a person shows reactive behaviours. Based on these proposals as well as on the Fundamentals of Care Framework and Practice Process, a complete form comprising the nursing clinical process specific to people showing defensive behaviours will be further presented (Part 2).

### Fourth essential piece of nursing knowledge: Interventions related to the needs, triggers, and Senses

Nurses who care for people living with AD and showing defensive behaviours must know various intervention strategies. These strategies must always target the triggers of the defensive behaviours as well as the needs of the person, taking into consideration his or her capacities and interests [10]. We want to reiterate that this article cannot replace a nursing teaching on interventions for people living with AD who show defensive behaviours and their families. Therefore, we simply present general principles.

Because the interventions target the factors contributing to the defensive behaviours expression and because these factors are related to the person, others, and the environment, we adopt the perspective of ecobiopsychosocial interventions proposed by Gerlach and Kales [23]. The “eco” part of the term is related to the physical and organizational environment. The “bio” part relates to physical needs. The “psycho” part relates to the psychosocial needs. Finally, the “social” part targets other people, for example, family members, formal carers, and other residents. Considering these ecobiopsychosocial components, it is easy to create links with

**Table 2:** Proximal factors of defensive behaviours.

Proximal level	Factors
Personal	Emotions: Fear, surprise, anxiety, boredom, frustration Physiological need states: Pain, cold, fatigue, elimination needs or problems Functional performance not supported or limited
Special nine needs related to assaultive incidents	Territoriality, communication, self-esteem, safety/security, autonomy, own time, personal identity, comfort, and cognitive understanding
Social environment	Inappropriate communication - Elderspeak communication – Orders and commands – Being asked to do something the person doesn’t want to do Invasion of privacy and bodily care- Body buffer zone Inappropriate assistance: Inappropriate expectations compared to functional abilities Physical restraints - Neuroleptic and benzodiazepine drug use Resident-resident: Many different situational-reactive (circumstance-driven) factors, for e.g., wearing pyjamas during breakfast, coughing during mealtime, asking about the television program, protecting a resident from another, “bad manners” such as picking at the nose during lunch or burping repeatedly, and invasion of personal territory (when a resident enters the room of another, eats the lunch of another, or touches another person’s leg during mealtime)
Physical environment	Stimuli quantity, quality and duration: Light, noise, temperature, odour
Organisational environment	Special care unit - Ward ambiance and design/furnishing/decoration Formal carer's perception of staffing and human/material resources adequacy - Age (lower) - Emotional exhaustion Human resources, staff stability or turnover. Shift (evening) Staff education, coaching, and support Culture, leadership, and policies.

Based on Algase, et al. [20], Boettcher, et al. [134], Dettmore, et al. [10] and Lanza, et al. [110] and completed with other previously mentioned authors.

**Table 3:** The Senses framework.

Security	To feel safe
Belonging	To feel part of things
Continuity	To experience links and connection
Purpose	To have a goal(s) to aspire to
Achievement	To make progress toward these goals
Significance	To feel that you matter as a person

Cited from Nolan, et al. [52]

the physical, psychological, and relational needs described in the FOC Framework. It is also easy to establish relations with the proximal factors and Boettcher’s nine needs.

These interventions can also be described according to the kind of intervention strategy. We can therefore refer to the proposal by Wolf, Goldberg, and Freedman [136], who present seven general strategies for people living with AD who show agitated or defensive behaviours. These strategies are: 1) Physical activity; 2) Sensory enhancement; 3) Social interaction; 4) Purposeful engagement; 5) Environmental design; 6) Differential reinforcement, and 7) Staff/caregiver education.

### Senses framework

Speaking of interventions, we have also considered with attention the Senses Framework proposed by Nolan, et al. [52]. This framework suggests six Senses experienced in the best care environments by everyone, i.e., the older person

being cared for, their family carers, nursing staff, and nursing students, to which we add other residents living in the unit. These Senses are linked with enriched environments of care [52] where people can have positive experiences. According to the authors, a relationship-centred approach to care would be more likely to support the achievement of these six Senses rather than a person-centred approach. These six Senses are presented in the table (Table 3). This framework also describes factors which contribute to creating the six Senses, permitting its implementation. Working to promote these factors in care settings could contribute to a better care experience for everyone [52], which we think is very important. The Senses Framework guide a systematic scoping review protocol on physically aggressive behaviors in older people living with cognitive disorders by Bourbonnais, Goulet, et al. [137].

Regarding the intervention’s implementation, guidelines explain the importance to apply the care plan with rigour and 24/7 consistency. It is also important to investigate the feasibility of interventions and to support caregivers and family members in carrying them out. It is critical to set outcome measures and diligently monitor the effects of interventions.

### Strategies to prevent and defuse incidents

Nursing home nurses and managers should adopt preventive strategies for dealing with defensive behaviours. For example, Fitzwater and Gates [138,139] propose a violence prevention checklist with 12 skills. Also, Caspi [27] proposes 12 care staff strategies to prevent and defuse incidents between

residents. These strategies are centred around the resident showing defensive behaviours, i.e., refocusing, diverting, offering a walk, and never arguing. Other strategies are directed at other residents and groups of residents, i.e., redirecting to another area, positioning and repositioning seating arrangements, or even separating residents. Finally, some strategies target carers themselves, i.e., being alert and proactive, being informed of previous incidents, staying calm, and seeking help.

### **Acting competently in the presence of defensive behaviours**

Defensive behaviours can be expressed despite good prevention and intervention strategies. In this case, nurses and all health care personnel should be trained to use specific intervention techniques. These techniques are designed not only to avoid escalation to assaultive behaviours, but also to protect the carers themselves and the people around them, and to redirect a person showing protective and defensive behaviours. Because of the more fragile profile of older adults and the specificities of neurocognitive diseases, intervention techniques should not be the same as those used with adults suffering from other mental health problems and in crisis situations. An example of inspiring training is the Gentle Persuasive Approaches (GPA®) in Dementia Care offered in Ontario by Schindel Martin, Loisel, et al. [4,19,140,141].

### **Pharmacological interventions**

Finally, we must talk about pharmacological interventions. Some recommendations and guidelines exist regarding pharmacological interventions for people showing reactive behaviours, and more particularly, defensive ones.

We approach pharmacological treatment for people living with AD who show defensive behaviours with a beneficial-use perspective based on guidelines, experts' recommendations, as well as Kales', et al. [74] and Tisher and Salardini's [142] proposals. It is possible to summarize this pharmacological subject with four categories of principles. The first principle is related to disease and health factor-modifying interventions. These treatments can retard the progression of AD, since it is not yet possible to stop it, or to treat it as health problems such as infection or constipation. The second principle of treatment is centred on compromised needs and unpleasant symptoms, which could be pain, depressive symptoms, anxiety, or disturbing hallucinations. The third principle of treatment is related to safety risk. When faced with an imminent risk of aggression toward oneself or others, psychotropic drugs should be used to treat the person. Finally, the fourth principle of treatment is related to harm minimization - and drug misuse. This principle is linked to optimal use of drugs for people living with dementia. Every pharmacological prescription should be established through an in-depth assessment of health and underlying causes, and not be based solely on the state of defensive behaviours. It is also essential to consider preliminary and concomitant ecobiopsychosocial interventions have been implemented.

Moreover, a thoughtful follow-up of therapeutic effects, adverse effects, as well as treatment acceptability and observance must be done.

## **Conclusion**

Defensive behaviours shown by people living with AD is a crucial challenge in nursing. Indeed, these behaviours frequently mean that the person has unmet needs and is placed in a situation where several triggering factors produce a bad experience. Moreover, defensive behaviours may have disastrous consequences not only for persons who show such behaviours, but also for all people involved, namely, the family members, other residents, and nursing staff.

Considering all these facts, we have referred to general and situation-specific levels of knowledge to build a proposal based on four essential pieces of knowledge for these nurses. Our proposal is constructed around a relationship-centred care perspective and is rooted in the FOC Framework. Our proposal is well illustrated by the prismatic mid-paradigm for nursing care of people living with AD who show defensive behaviours. The first essential piece of knowledge is related to the characteristics of the person living with AD and the characteristics of the disease itself. The second essential piece of knowledge refers to the goals of defensive behaviours, which are undoubtedly important to understand. The third essential piece of knowledge is built with factors contributing to the expression of defensive behaviours. Finally, the fourth essential piece of knowledge is constituted with the principles guiding the choice and implementation of the ecobiopsychosocial and pharmacological interventions.

The first part of this article represented the essential prerequisite part leading to the very practical and precise formulation regarding nursing care of people living with AD who show defensive behaviours. The second part will therefore introduce the Situation-Specific Fundamentals of Care Practice Process, which is essential for nurses and nursing students caring for people living with AD who show defensive behaviours.

This article represents a first version of our proposal and is bound to evolve with new theoretical proposals and developments, and the conceptual work of the authors.

## **Relevance to Clinical Practice**

Because the nurses working in nursing homes occupy a central place in the care of people living with AD who show defensive behaviours, they must be able to assess the person's needs and determine judicious interventions. Moreover, nurses must have a broader perspective than person-centred care since they also take care of the person's family members and other residents living in the unit, and they must support formal carers. Therefore, nurses working in nursing homes must adopt a relationship-centred perspective of care which is, in our view, well integrated in the FOC Framework. Finally, being the leaders of the nursing staff, monitoring nursing students, and occupying an important role in the interprofessional team, nurses must possess knowledge related to people living with AD as well as a specific body of knowledge centred on defensive behaviours.

Nursing must be rooted in relevant theoretical explanations. That is why, before proposing a practice process for the nursing care of people living with AD who show defensive

behaviours, we must build and present the theoretical foundations of our proposal.

The general level of knowledge of gerontological nursing practice describes the recommendations made about the specific clinical expertise that nurses must possess. This general perspective can bring into light some differences between countries related to the organization of health care, modes of professional training, nursing roles, and professional laws and rules. It is therefore important to specify this level of knowledge depending on the context of practice. Despite this, there are still extremely important proposals to be considered regardless of the practice setting. This level of knowledge is useful to guide and organize the clinical nursing practice and provide guidance on the level and scope of competence that nurses should have to be able to practice.

Regarding the situation-specific level of knowledge, we can find theoretical proposals and research data which are centred around persons living with AD who show defensive behaviours. We can say that the situation-specific level of knowledge is more universal than the general level of knowledge. The elements proposed directly target the different nursing practice components. This situation-specific knowledge may also be useful in planning the curriculum and training for nurses or nursing students.

It is important to understand that these two levels of knowledge deal with the advancement of knowledge and evolution of professional practices and must therefore be rigorously updated. Thus, this proposal cannot be established once and for all, and will have to be updated and completed regularly. It is only by demonstrating rigour that such proposals can be useful for clinical nursing practice.

Finally, it is important to realise that clinical nurses or nursing students cannot easily transfer such proposals into their daily practice. Therefore, it is essential to propose a clinical practice process which is dedicated to supporting nurses in the concrete integration of this knowledge into their professional and clinical practice. Additionally, such a practical process can also enable nurse educators to make their explanations more concrete. Finally, a practice process provides step-by-step guidance for the clinical approach of nursing students when they are doing an internship or their work. Since such a tool is essential to the application of the knowledge presented in this article, we are pleased to further explain the FOC Practice Process specific to the person living with AD and showing defensive behaviours in the following, second part (Appendix).

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