

## APPLICATION OF COGNITIVE STIMULATION IN THE CARE OF INSTITUTIONALIZED ELDERLY PEOPLE WITH DEMENTIA

Aplicação da estimulação cognitiva no cuidado ao idoso institucionalizado com demência

Aplicación de la estimulación cognitiva en el cuidado de personas mayores institucionalizadas con demência

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### ABSTRACT

**Objective:** to identify the scientific evidence on nursing care for institutionalized elderly people with dementia.

**Method:** this is an integrative literature review, using the PICO strategy. Studies published from 2009 to 2018 were included in the LILACS, CINAHL, MEDLINE and SCOPUS databases. The articles were analyzed for quality using the Mixed Methods Appraisal Tool. **Result:** of 6,144 texts initially obtained, 7 articles were selected, 54% of which were published in 2010 and 14% in 2016. The identified interventions are related to the practice of physical activities and cognitive stimulation, which prove to be quite positive in the care of the elderly with dementia, as it allows to stimulate brain functions still preserved, promoting an improvement in their quality of life. **Conclusion:** most of the identified interventions can be applied by the multiprofessional team and can be associated, when necessary, with pharmacological resources.

**DESCRIPTORS:** Elderly; Nursing care; Nursing care; Nursing consultation; Long-term institution.

### RESUMO

**Objetivo:** identificar as evidências científicas sobre os cuidados de enfermagem aos idosos institucionalizados com demência. **Método:** trata-se de uma revisão integrativa da literatura, com a utilização da estratégia PICO. Foram incluídos estudos publicados no intervalo de 2009 a 2018, nas bases de dados LILACS, CINAHL, a MEDLINE e a SCOPUS. Os artigos tiveram sua análise de qualidade realizada

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a partir do instrumento *Mixed Methods Appraisal Tool*. **Resultado:** de 6.144 textos inicialmente obtidos foram selecionados 7 artigos, sendo 54% publicados em 2010 e 14% no ano de 2016. As intervenções identificadas estão relacionadas à prática de atividades físicas e de estimulação cognitiva, as quais demonstram ser bastante positivas no cuidado ao idoso com demência, pois permite estimular funções cerebrais ainda preservadas, promovendo uma melhora na sua qualidade de vida. **Conclusão:** a maioria das intervenções identificadas podem ser aplicadas pela equipe multiprofissional e podem ser associadas, quando necessário, aos recursos farmacológicos.

**DESCRIPTORES:** Idoso; Cuidados de enfermagem; Assistência de enfermagem; Consulta de enfermagem; Instituição de longa permanência.

## RESUMEN

**Objetivo:** identificar la evidencia científica sobre el cuidado de enfermería para personas mayores institucionalizadas con demencia. **Método:** esta es una revisión de literatura integradora, utilizando la estrategia PICO. Los estudios publicados de 2009 a 2018 se incluyeron en las bases de datos LILACS, CINAHL, MEDLINE y SCOPUS. La calidad de los artículos se analizó utilizando la Herramienta de evaluación de métodos mixtos.

**Resultado:** de 6.144 textos obtenidos inicialmente, se seleccionaron 7 artículos, el 54% de los cuales se publicaron en 2010 y el 14% en 2016. Las intervenciones identificadas están relacionadas con la práctica de actividades físicas y la estimulación cognitiva, que resultan ser bastante positivas en el cuidado del niño. ancianos con demencia, ya que permite estimular las funciones cerebrales aún preservadas, promoviendo una mejora en su calidad de vida. **Conclusión:** la mayoría de las intervenciones identificadas pueden ser aplicadas por el equipo multiprofesional y pueden asociarse, cuando sea necesario, con recursos farmacológicos.

**DESCRIPTORES:** Ancianos; Cuidado de enfermera; Cuidado de enfermera; Consulta de enfermería; Institución a largo plazo.

## INTRODUCTION

Longevity brings with it aspects related to fragility resulting from aging, such as the significant increase in the prevalence of chronic diseases, dementia<sup>1-2</sup> and the emergence of difficulties experienced by family members in the care of the elderly, resulting in the growth of this public in institutions that offer continuous care, known as Instituições de Longa Permanência para Idosos (ILPIs).<sup>3</sup>

In the context of age-related diseases, dementia syndromes appear as one of the most prevalent chronic comorbidities in the elderly population. About 50 million people currently live with dementia worldwide. This number could reach an estimated 82 million by 2030 and 152 million by 2050.<sup>4</sup>

Dementia syndromes constitute a set of signs and symptoms in which there is progressive cognitive decline or behavioral changes of a neuropsychiatric nature, promoting the elderly the evolutionary loss of their cognitive and motor capacity, with compromised independence for the development of daily life activities.<sup>4-5</sup> What will require actions by the government to produce programs and public policies that meet their needs and supply of health professionals trained to promote to those with this condition, care strategies that provide comfort and minimize the consequences of the disease.<sup>6</sup>

Concerned with the care process, the nurses who act in the management of the care of the elderly with dementia syndrome, should develop interactive methods with the patient, which stimulate the cognitive aspects still preserved.<sup>7-8</sup>

In this sense, studies reveal the possibility of reducing the rate of degradation of cognitive aspects through stimulation programs, because, even with aging, there is still brain plasticity, which refers to the brain's ability to remodel and remake its connections, from the reaction to experiences, learning and damage.<sup>9</sup>

From this assumption, non-pharmacological interventions gain great importance because they can bring positive benefits when associated with drug treatment, but are little known, practiced and disseminated.<sup>10</sup>

In this context, it is observed that providing adequate care to the special needs of the elderly with cognitive decline is still a challenge for institutions and their employees, especially with regard to non-pharmacological interventions.<sup>11</sup>

In view of this scenario, it was found necessary to conduct a review of existing scientific production to answer the following research question: What is the scientific evidence on interventions related to cognitive stimulation applied by nursing in the care of the elderly institutionalized with dementia?

Thus, this study aims to identify the scientific evidence on interventions related to cognitive stimulation applied in the care of elderly institutionalized with dementia.

## METHODOLOGY

It is an integrative review of the literature, which consists of a study method that allows knowledge to be synthesized through the analysis of relevant research,<sup>12</sup> constituting an instrument of Evidence-Based Practice.<sup>13-14</sup> It was conducted in the LILACS, CINAHL, MEDLINE and SCOPUS databases, during the months of March to May 2018.

In the elaboration of the present review, the six stages of the integrative review production process were used: 1) elaboration of the guiding question, 2) search in the literature of the primary studies, 3) extraction of the data, 4) evaluation of the primary studies, 5) analysis and synthesis of the results and 6) presentation of the final product.

To elaborate the guiding question, the PICO<sup>15</sup> strategy was used, which is a tool used to elaborate the problem question of this study, and from each item of the PICO strategy were found Descritores em Ciências da Saúde (DECS) and Mesh (Medical Subject Headings) to compose the search strategy. Item C of the PICO strategy was not used, since this study was not restricted to include clinical trials with comparison group. Thus, we considered the context (Co) of the study.

Once chosen, the descriptors were then combined through the Boolean OR and AND operators to perform searches in the survey databases, as shown in Table 1:

**Table 1** - Search strategies used in the databases/virtual library for the selection of studies on nursing interventions used in the care of the elderly institutionalized with dementia. João Pessoa, PB, 2009-2018

Database Online library	Search Strategies
LILACS (via Biblioteca Virtual de Saúde - BVS)	instituição de longa permanência para idosos) OR (tw:(idoso)) AND (tw:(cuidados de enfermagem)) OR (tw:(assistência de enfermagem)) AND (tw:(demência)) AND (tw: terapias de cognição)
MEDLINE/ PUBMED	(((((aged) OR aging) AND "nursing care") AND dementia) OR "alzheimer disease") AND "nursing homes") OR "home for the aged" AND "cognition"
CINAHL (via Ebsco Host)	Instituição de longa permanência para idosos OR idoso AND cuidados de enfermagem OR assistência de enfermagem OR consulta de enfermagem AND demência AND cognition
SCOPUS	(TITLE-ABS-KEY ( aged ) OR TITLE-ABS-KEY ( aging ) AND TITLE-ABS-KEY ( nursing AND care ) AND TITLE-ABS-KEY ( dementia ) OR TITLE-ABS-KEY ( alzheimer AND disease ) AND TITLE-ABS-KEY ( nursing AND homes ) OR TITLE-ABS-KEY ( home AND for AND the AND aged ) )

The inclusion criteria for this study consisted of articles: 1) that presented full text available in English, Portuguese or Spanish; 2) that described any nursing intervention or other multiprofessional care practice for the elderly with dementia; 3) published between November 2009 and April 2018. This period was chosen taking into account the enactment of COFEN Resolution 358/2009, which provides on the Sistematização da Assistência de Enfermagem (SAE) and the implementation of the Nursing Process in environments, public or private, where professional nursing care occurs.

It was chosen the exclusion of review articles; articles that did not correspond to the objective of the study; medical guides; reviews; comments; technical and scientific reports; ministerial documents; government information; dissertations; theses; monographs; editorials and letters to the reader.

The literature search results were added and managed through a free reference management software (Mendeley-Desktop version 1.17.7). The use of this type of tool reduces the chance of errors in the cataloguing of studies found.

The selection of studies was made through three stages: 1) an initial screening from the reading of the title only; 2) a second screening from the reading of the abstract; 3) finally a third screening from the reading of the full text.

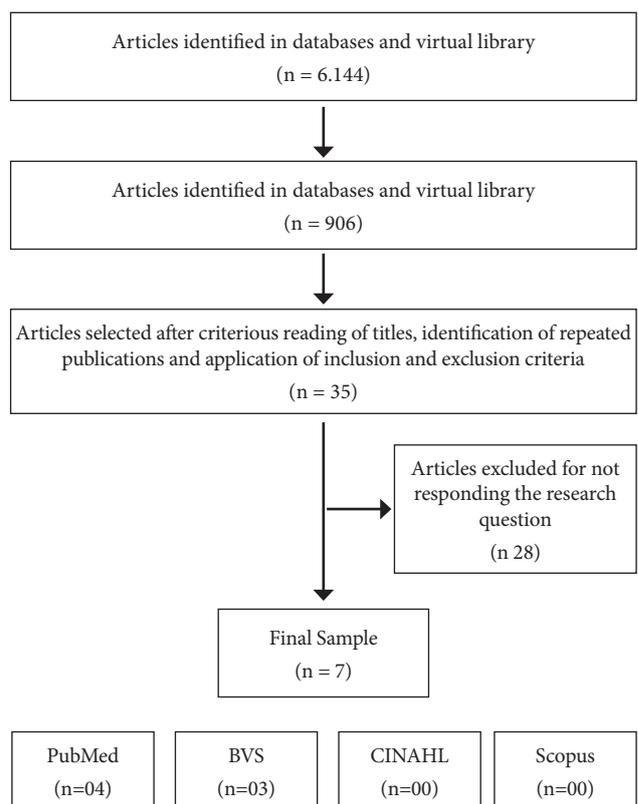
The Mixed Methods Appraisal Tool (MMAT) was used to analyze the quality of the articles, consisting of a checklist

developed to provide a quality assessment tool for quantitative, qualitative and mixed methods studies included in mixed systematic reviews.<sup>16-17</sup>

The data were extracted in order to preserve the context of the findings,<sup>18</sup> according to a study that addressed techniques to extract findings in synthesis studies of mixed method research. This process of data extraction occurred using two instruments; the first contained the metadata of the article: publication journal, authors, main author's institution, title, year of publication and country of the study, and the second instrument was formed by the variables of interest of the study: type of study, objective of the research, sample/population, location, intervention, instruments, results and limitations of the study.<sup>18</sup>

Due to the heterogeneity of the articles found, the analysis and synthesis of the data took place through the narrative synthesis. Each of the studies had a designated number from one to seven (Table 2), in order to facilitate its identification. The flowchart of the studies is being shown below (Figure 1).

**Figure 1** - Explanatory flowchart of strategy of search and selection of the studies on nursing interventions used in the care of the elderly institutionalized with dementia in the Databases, MEDLINE via PUBMED, CINAHL and SCOPUS and VHL virtual library. João Pessoa, PB, 2009-2018.



## RESULTS

In the analysis of the seven selected publications, the oldest studies are from the year 2010, this also being the year of largest publication among the selected articles<sup>19-22</sup> and the most recent study<sup>23</sup> was published in the year 2016.

Most of the studies come from Europe, of which two are from Germany<sup>11,19</sup> and one from the Netherlands;<sup>24</sup> the others are thus divided: one from North America,<sup>23</sup> two Thai<sup>21-22</sup> and one from Brazil.<sup>20</sup>

Among the institutions of origin of the main authors, six are from universities<sup>11,19-20,22-24</sup> and only one from the health service.<sup>21</sup>

**Chart 2** - Metadata of selected articles on nursing interventions used in the care of institutionalized elderly with dementia. João Pessoa, PB, 2009-2018

Nº	Magazine/ Year Published	Authors	Main Author's Institution	Title	Country of Research
1	BMC Geriatrics 2010	BERG A. et. al.	University Halle - Wittenberg, Germany	<i>Snoezelen, structured reminiscence therapy and 10-minutes activation in long term care residents with dementia (WISDE): study protocol of a cluster randomized controlled trial</i>	Germany
2	Revista Gaúcha de Enfermagem 2010	JESUS, I. S. de et al.	Graduating from the Bachelor of Nursing course, Universidade Estadual do Sudoeste da Bahia - UESB	Cuidado sistematizado a idosos com afecção demencial residentes em instituição de longa permanência	Brazil
3	Journal of Clinical Nursing 2010	CHANG, Fang-Yu et al.	Taipei Veterans General Hospital - Nursing	<i>The effect of a music programme during lunchtime on the problem behaviour of the older residents with dementia at an institution in Taiwan</i>	Taiwan
4	Journal of Clinical Nursing 2010	Huei- Chuan Sung; Anne M. Chang; Wen-Li Lee	University and Supervisor Departamento f Nursing, Hualien Tzu Chi Medical Centre	<i>A preferred music listening intervention to reduce anxiety in older adults with dementia in nursing homes</i>	Taiwan
5	BMC Geriatrics 2012	VAN de VEM, G. et al.	University Nijmegen Medical Centre	<i>Improving person-centred care in nursing homes through dementia-care mapping: design of a cluster-randomised controlled trial</i>	Netherlands
6	BMC Geriatrics 2013	PALM, R. et al.	Witten/Herdecke University- Faculty of Health, School of Nursing Science	<i>Longitudinal evaluation of dementia care in German nursing homes: the "DemenzMonitor" study protocol</i>	Germany
7	Author Manuscript 2016	KONTOS, P. et al.	University Toronto	<i>Elder-clowning in long-term dementia care: Results of a pilot study</i>	Canada

According to the quality evaluation of the selected articles performed by the MMAT instrument, the following types of research were identified: three studies used the Quantitative non-randomized method,<sup>11,21-22</sup> one, the Mixed Method;<sup>23</sup> two the Quantitative randomized controlled method (trials)<sup>19,24</sup> and one the Qualitative method.<sup>20</sup>

In the studies selected from the MMAT viewpoint, a concern of the researchers to build methodological paths that would make it possible to achieve representative results of the studied reality is observed; however, some studies did

not present the sample calculations necessary to obtain a quantitatively representative number.

The population selected for the studies that composed the sample for this review was constituted by elderly with dementia,<sup>19-23</sup> elderly and their formal caregivers<sup>24</sup> and only by formal caregivers.<sup>11</sup> This last one, brought as study proposal the application of a questionnaire to the caregivers of the institutions, for the survey of several indicators, among them the care provided by the nursing team.

**Chart 3** - Data on methodology, population/sample and nursing interventions used in the studies on care to the elderly institutionalized with dementia. João Pessoa, PB, 2009-2018

Nº	Methodology	Population/Sample	Interventions / Nursing Care / Multiprofessional Care
1	Randomized controlled trial	Elderly residents in 20 retirement homes in Saxony and Saxony Anhalt	- Structured Reminiscence Therapy - Snoezelen Environment
2	Descriptive exploratory study	9 elderly people with dementia living in a Long Term Institution in Jequié	- Use of calendar - Story telling (fables) - Rescue your life stories - Bingo - Realization of stretching and exercises - Incentive to self-care - Non-verbal communication (gestures and body language)
3	Almost experimental design	41 elderly institutionalized with dementia	- Music therapy during lunch
4	A quasi-experimental pre-test and post-test project	52 elderly residents in an institution - 29 elderly in the intervention group - 23 elderly in the control group	- Favorite music
5	Randomized, conglomerate controlled clinical trial, with qualitative and quantitative approach	- elderly residents in Special Care Units for Dementia - formal caregivers	- Cuidado Centrado na Pessoa (CCP) - Mapeamento de Cuidados em Demência (MCD)
6	Observational Longitudinal Descriptive Study	- Nursing Home Caretakers in Germany	- Behavioral and cognitive evaluation - Validation Therapy - Reminiscence Therapy - Multi-sensory stimulation - Physical Activity
7	Mystic method	23 non-idiotic residents	A pair of elderly clowns using the following interventions: - improvisation - humor - empathy - music - musical instruments - dance

The description of interventions to assist the elderly with dementia shows that they go beyond the scope of biological care and show a care aimed at meeting psychological and behavioral needs, often present in the evolutionary process of dementia.

Chart 4, below, brings data on the conclusive findings and recommendations/ limitations of the studies that were used for the characterization and tracking of cognitive decline, for correct inclusion of participants in the respective researches.

**Chart 4** - Data regarding the conclusion and recommendations/limitations presented in the studies on care for the elderly institutionalized with dementia. João Pessoa, PB, 2009-2018

Nº	Conclusion	Recommendation/Limitation
1	This study will contribute to the evidence on the effectiveness of non-pharmacological interventions in the treatment of dementia.	Didn't show in the article
2	The study was able to test and systematize a basic nursing care model based on NANDA and applicable to institutionalized elderly with dementia.	It is also important to emphasize that the caring actions are more effective for the elderly when carried out in a systematized way and incorporated to the routine of the institution, allowing them more security in the most advanced stages of the demential process.
3	Music is able to reduce the degree of problematic behavior of elderly people with dementia, positively affecting the workload of nurses.	In the next studies use a comparative sample (control group) Use scales to evaluate the change in emotional and facial state; Time for monitoring the behavior of the elderly;
4	Listening to your favorite music can be a beneficial and affordable intervention for nursing staff to improve anxiety symptoms in elderly adults with dementia in nursing homes;	-In order to achieve the goal with this method of care, it is necessary to identify the musical preferences of the elderly
5	From a public health perspective, this study should provide evidence on the effectiveness of non-pharmacological support for patients with dementia in nursing homes	Didn't show in the article
6	DemensMonitor is the first study in Germany that assesses how dementia care is provided in nursing homes in relation to living arrangements and recommended interventions.	The results are limited in terms of representativity, due to the sample being for convenience;
7	The practice of elderly clowns has reduced the psychological and behavioral symptoms of dementia, especially in AD.	The study did not have a control group; Small sample and from a single nursing home;

## DISCUSSÃO

From the survey conducted for this study, it was observed that the interventions presented, coincide in what concerns to be activities that stimulate the cognition of the elderly with dementia. Studies already show there is a great benefit in the introduction of cognitive stimulation activities in the treatment of elderly with Alzheimer's disease, which is the most recurrent type of dementia among the elderly.<sup>25</sup>

The application of interventions, that promote the stimulation of cognition as, therapy of orientation to the reality, through the use of calendars, newspapers, videos, photographs of relatives and reminiscence, in which experiences lived by the elderly in the past are used, provoked a significant increase in the score of the Miniexam of the Mental State of the elderly attended in a Program of the Fluminense Federal University, evidencing the importance of motivating the practice of this type of activity.<sup>25</sup>

The MDC, is a multi-competent intervention developed by the Dementia Research Group at the University of Bradford, United Kingdom. This intervention is based on Kitwood's psychosocial personality theory of dementia, which postulates person-centered care, describing that much of the malaise experienced by people with dementia stems from negative environmental influences, including personal attitudes and care practices.<sup>26</sup>

This care practice highlights the importance of individualized care, which should be based on the life history of the person with dementia, their needs and preferences, thus overcoming the domains of physical and mental care.<sup>27</sup>

The person-centered care approach proposes to formal caregivers to observe how these elderly people interact with dementia and the world in which they are inserted, thus seeking to identify stimuli that trigger agitation, aggression or any other malaise.<sup>27</sup>

Other care interventions for the elderly with dementia identified were validation therapy, reminiscence therapy, multisensory snoezelen stimulation, and physical activity.<sup>11,19</sup> These care tools make up the set of behavioral techniques that seek to promote change in the patient's nonfunctional behavior.<sup>28</sup>

Multisensory stimulation consists of the input of information to the brain by means of visual, auditory, olfactory, gustatory and somesthetic sensors, which can constitute a means of building new synapses and restoring cognitive and sensorimotor functions, due to the brain's ability to learn by means of stimuli from the environment. In this context, the snoezelen, which is a practice of sensory stimulation, is characterized by the adaptation of a closed place or outdoor, with equipment that allows various stimuli for the senses and that can also provide relaxation.<sup>29</sup>

In geriatrics, the *snoezelen* is used to assist in the treatment of elderly people with dementia, aiming to reduce the psychological and behavioral symptoms resulting from the pathology.<sup>30</sup>

The Reminiscence Technique (RRT), another intervention used in the care of the elderly with dementia, is a reminder of the past; it is performed through storytelling, which should not be corrected by those who listen to them.<sup>31</sup> Results evidenced in the literature indicate a potential effectiveness of the application of RRT in areas such as cognition, quality of life and depression in elderly with cognitive decline.<sup>32</sup>

Still in the context of the use of behavioral interventions for the care of the elderly with dementia, the validation technique is a therapeutic approach commonly used in patients with Alzheimer's disease, which seeks to offer the patient the opportunity to resolve conflicts of the past, from the encouragement and validation of the expression of feeling, also providing an attitude of respect to the elderly, in which the caregiver should accept the reality proposed by the elderly and not try to bring them back to reality.<sup>33</sup>

The application of physical activities in elderly with cognitive decline was cited in selected studies as care intervention,<sup>11</sup> presenting positive results for the control of symptoms such as depression. Its benefit was also recognized in the improvement of affective and neuropsychiatric symptoms presented by the elderly with diagnosis of AD.<sup>34</sup> Another point observed as beneficial in the application of physical activity is the reduction of the caregiver's overload, due to the improvement of behavioral and psychological symptoms of the elderly.<sup>35</sup>

Music therapy also appears as a tool capable of offering individuals several benefits such as providing comfort, stimulating memory, offering entertainment, assisting creativity, promoting motor and cognitive development, besides motivating the expression of feelings and stimulating the individual to reflect on his/her life history; in this context, this therapeutic resource becomes very effective in the treatment of elderly people with cognitive decline, as it will promote the stimulation of their cognition, as already mentioned.<sup>36</sup>

Another therapeutic approach used in the care of the elderly with dementia<sup>23</sup> was the use of elderly clowns, which happens due to the visitation performed by older people dressed in period clothes, wearing red nose, with the minimum of make-up, practicing with the elderly playful actions with the use of music, dance, musical instruments, improvisations and humor, showing according to results presented by the study itself, the reduction of behavioral and psychological symptoms of dementia, mainly in DA carriers.

Of the seven studies selected to compose the final sample of this review, only one<sup>20</sup> presented nursing interventions based on the SAE process. This systematization presents itself as an important tool of care, allowing the nurse the planning, execution, control and evaluation of therapeutic interventions applied by the nursing team, to the individual receiving care, ensuring quality in the interventions applied and an individualized assistance, which will culminate in effective care.<sup>37</sup>

The interventions listed in this study<sup>20</sup> followed 4 four categories, which were identified as: motor behavior, cognition and memory, communication and socialization, and other physical health problems. The following interventions were highlighted: use of calendars, storytelling, retrieving their life stories, bingo, performing stretching and exercises, encouraging self-care, and stimulating nonverbal communication.

In the studies evaluated, a concern with methodological rigor was noted, but the need to increase their investigative sample was observed, so that the results can, in fact, be representative in relation to what they propose to investigate, or prove. The national production is reduced; it was also identified the absence of a nursing instrument that promotes the collection of data directed to develop a nursing assistance to the elderly with cognitive decline, which would favor the implementation of measures and interventions directed to meet the needs of each elderly, thus promoting an individualized assistance and focused on the individual needs of each person.

## CONCLUSION

The interventions identified in the evaluated studies are related to the practice of physical activities and cognitive stimulation such as reality orientation therapy; validation therapy; reminiscence therapy; multisensory *snoezelen*-type stimulation; physical activity; music therapy, besides the use of elderly clowns. It was also identified a study approaching the nursing interventions based on the SAE process.

There was emphasis to the scientific productions in the international scene, mainly in the European countries, bringing a non-pharmacological therapeutic approach, that follows the guidelines of best practices of the care. The majority of the identified interventions can be applied by the multiprofessional team and can be associated, when necessary, to the pharmacological resources.

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