Special Article

Health Beliefs and Behaviors About Dementia in Spain And Greece: A Comparative Review.

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Abstract

Introduction: Dementia affects memory, thinking and social skills, thus affecting daily life. There are different risk factors that contribute to dementia: some are not modifiable, such as age, family history and Down syndrome. Yet, others are modifiable, e.g. lack of proper diet and exercise, excessive alcohol consumption, diabetes, smoking, air pollution, sleep disturbances and depression among others.

Aim: The general objective of this review was to investigate the attitudes and behavior of the public towards dementia disease.

Methods: For the needs of this critical review, relevant articles were searched for in PubMed using key words in 12 separate combinations (sub-searches). The articles chosen were the most appropriate for summarizing the relationship between the behaviors of the Spanish and Greek public relating to dementia. Keywords used were dementia, Spain, Greece and those summarized as risk factors, together with the Boolean operator 'AND' appearing in both the title and the full text.

Results and Discussion: Results revealed that a number of the studies mentioned above confirm that the risk of dementia can be increased by a variety of factors, both modifiable and non-modifiable. Each selected article concludes on how these factors may increase or decrease the risk of developing, aggravating or ameliorating dementia. In addition, dementia may be a consequence of another medical condition, such as depression. From another point of view, this disease holds high co-morbidity since it may be triggered by other types of illnesses such as hypertension, obesity, diabetes, etc. Yet, advancing age is the most critical factor for the development of this disease.

Conclusions: From a nursing point of view, dementia, and the person suffering from it, should be treated as the key-user par excellence in the provision of care. The patient and carer can, with deliberate action, full knowledge and high motivation, slow down the progress of the disease, reduce the risk exposure and improve the daily conditions and their overall quality of life, even when the root causes cannot be eliminated. In this context, our nursing objective as healthcare professionals is to control and limit the secondary processes developing and improve the quality of life of both the patient and the long-suffering caregivers too.

Keywords: dementia, Alzheimer's, health beliefs

Introduction

Dementia is a disease that affects memory, thinking and social skills, thus affecting daily life. There are different risk factors that contribute to dementia: some are not modifiable, such as age, family history and Down syndrome. Yet, others are modifiable, such as lack of proper diet and exercise, excessive alcohol consumption, diabetes, smoking, air pollution, sleep disturbances and depression among others (Silva et al., 2019; Armstrong, 2019).

About sixty disorders, some cerebral and some systemic can induce a dementia syndrome. This is why determining the etiology of the condition is critical as many of its causes are curable and hence have the potential to slow down and delay the progress of dementia in process. Dementias are categorized into two groups based on their main etiology: cerebral or primary dementia and systemic or secondary dementia.

● Cerebral or primary dementia: degenerative diseases that cause the brain to shrink and nerve cells to die. Pick's, Alzheimer's, Huntington's, Parkinson's, Fahr's, Wilson's, senile dementia, supranuclear palsy, metachromatic leukodystrophy, and multiple sclerosis are all degenerative dementias (Mentez, 2021).

● Secondary dementia: caused by systemic conditions such as: vascular or toxic disorders, vitamin deficiency, drug-induced, trauma, tumors, infections, epilepsy, normotensive hydrocephalus, general illnesses, and endocrinopathies.

Alzheimer's disease is the most common form of dementia, with a frequency of 50-60%, while 8-15% of patients have vascular disease. Following that are alcoholism (6-18%), neoplasms (5%), normal pressure hydrocephalus (4-5%), Huntington's Disease (2-5%), and metabolic abnormalities (2-4%) (Ghosh, 2010).

Often the patient's appearance and behavior can suggest dementia, i.e. the patient may appear untidy, behave improperly, and make egregious errors. He or she is generally uncooperative during a medical interview and appears disconnected and uninterested. Their apathy to major blunders, such as forgetting a spouse's name or the number of children they have, is notable (McKhann et al., 2011).

Many depictions of the demented patient are accompanied by a 'dark' sense of the disease, which supposedly corresponds to a fully advanced state of dementia, but the contrast between the patient's first appearance and the depth of the mental problem can be deceiving. Under this light, the dysfunction is fundamental, constant, and early. It shows up as forgetfulness, little mistakes, and repetitions in moderate cases; as the condition worsens, the capacity to learn and repeat what has been learned deteriorates. The ability to record, retain, and recall information is hampered, impairing immediate, intermediate, and long-term memory. New knowledge is not kept due to fixation amnesia, but long-term recall memory is retained for considerably longer periods of time (Emre et al., 2014).

Deteriorating cognitive performance leads to increasing dependency in performing activities of daily living. Many professionals who apply their knowledge in the healthcare field are unfamiliar with the world of dementia and do not know how to differentiate between the different types of dementia. Thus, if dementia, even in the early stages, presents with extra-pyramidal syndromes, we should probably think of Lewy body dementia. Yet, if the symptoms of dementia are accompanied by falls and incontinence, we should think of normotensive hydrocephalus; if the progression of dementia is very rapid, clinicians should check out for disease caused by prions especially if executive and behavioral dysfunction coexists. If there is an alteration in the early stages, one should consider fronto-temporal dementia. Hence, it is important when dementia is suspected to undergo a detailed neuropsychological assessment, a specialized medical visit, a correct evolutionary follow-up so that a single classification is provided for each patient case-type, using Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria as in table 1 below (Wang & Dong, 2018; Ballard 2013; Miller, 2013).

Table 1: DSM_IV criteria for Dementia

Examples of DSM-IV criteria include some of the following taxonomy:	
Delirium, dementia, amnestic disorders and other cognitive disorders: ❖ Delirium: ➢ delirium due to...(specify medical illness) ➢ Substance-induced delirium ➢ Substance withdrawal delirium ➢ Delirium due to multiple aetiologies	Dementia: ➢ Early-onset Alzheimer's type dementia: ○ With delirium ○ With delusional ideas ○ With depressed mood ○ Uncomplicated
Dementia of late-onset Alzheimer's type: ○ With delirium ○ With delirium ○ With depressed mood ○ Uncomplicated	Vascular dementia: ○ With delirium ○ With delirium ○ With depressed mood ○ Uncomplicated
Dementia due to other medical illnesses ○ Persistent substance-induced dementia ○ Dementia due to multiple aetiologies	Amnestic disorders: amnestic disorder due to.... (indicate medical illness) Substance-induced persisting amnestic disorder

Developmental stages of dementia

Once dementia has been diagnosed, it has different evolutionary phases from onset to end, and in that sense the Global Deterioration Scale-Functional Assessment Staging (GDS-FAST), is of value in broadening our knowledge-base of predicting patterns of deterioration, since each patient may follow different trajectories of differential characteristics (Auer & Reisberg, 1997).

A study carried out in the Emergency Department of a Spanish hospital found that in the early stages of dementia syndrome (MCI or preclinical dementia with Geriatric Depression Scale (GDS) =3), decompensation of chronic multi-pathology (chronic obstructive pulmonary disease, heart failure, etc.) is the most frequent cause of admission to the hospital ward and normally the initial stages are usually accompanied by weight loss. Moreover, in intermediate phases (GDS 4-5) in which the decompensation of their chronic multi-pathology persists as a cause of admission, other diagnoses such as falls and bone fractures begin to become more prevalent. However, in advanced phases (GDS 6-7), decompensation of the chronic pathology is observed, although, on this occasion, it is recorded as ill-defined symptoms, given that it is the atypical form, and therefore difficult to diagnose, in which the symptoms manifest themselves in these patients, with frequent pathologies not being recognized in this phase, such as ulcers, constipation and/or fecal impaction, pain, contractures or epilepsy, among many others (Fountouki et al., 2021; Andreu-Reinón et al., 2019).

Aim

The general objective of this review is to investigate the attitudes and behavior of the public towards dementia disease.

- Specific objectives:

● to improve the understanding of the number and needs of people with dementia in both Spanish and Greek societies.

● to help people recognize risk factors and ways to avoid them and to assist relatives living with a person suffering by this disease.

● to improve early diagnosis and help recognize different types of the disease.

Materials and Methods

For the needs of this critical review, relevant articles were searched for in PubMed using key words in 12 separate combinations (sub-searches). Thus, the search was carried out exclusively in PubMed because this database was considered inclusive enough to serve the needs of this review. The articles chosen were the most appropriate for summarizing the relationship between the behaviors of the Spanish and Greek public relating to dementia and thus served the main objective of this paper. The keywords used were dementia, Spain, Greece and those summarized as risk

factors, together with the Boolean operator 'AND' appearing in both the title and the full text.

Results

We included 12 full-text articles for further discussion, (i.e. one key reference for each sub-searches) which complied most closely to the following additional requirements: free full text, published within the last decade, language in Spanish or English, clinical trial; thus discarding all remaining articles that did not follow these filters and did not have coherence with the topic stated in the title.

1. Under the filter-equation: (dementia) AND (Spain). The results obtained were 7004. The filters applied to human species are reduced to 5829 results, published in the previous 10 years 3865 results. In the articles that appear in the full text search is reduced to 3844 results. From these results and after closer perusal, we have chosen this article: 'Incidence of Dementia and Associated Factors in the EPIC-Spain Dementia Cohort' which summarizes that the incidence of dementia increased with age and was higher among women. The risk of dementia was higher among subjects with lower educational level, who drank alcohol and had cardiovascular risk factors (Andreu-Reinón et al., 2020).

2. Under the filter-equation: (alcohol) AND (dementia) 5523 results appeared. After applying the filters clinical trial, published within the last 10 years, human species and English and Spanish language, results were reduced to 62 results. Applying the filter free full text reduces the search to 31 results, and finally differentiating the age of over 65 years old, reduced the search to 24 results. Following a relevant debate the article 'Alcohol Consumption and Risk of Dementia and Cognitive Decline Among Older Adults With or Without Mild Cognitive Impairment' was chosen which summarizes that an intake of 14 alcoholic drinks per week increases the risk of dementia which associated with lower cognitive scores (Koch et al., 2019).

3. Under the filter-equation: (caffeine) AND (dementia), 208 results appeared initially. After applying the relevant filters, results were reduced to only 3 results. Of these, the article

'Relationships Between Caffeine Intake and Risk for Probable Dementia or Global Cognitive Impairment: The Women 's Health Initiative Memory Study' has been chosen. This article shows that there is a lower probability of dementia or cognitive impairment in older women whose caffeine intake was above average (Driscoll et al., 2016).

4. Under the filter-equation: (pollution) AND (dementia) 545 results appeared and after applying the filters mentioned above the search was confined to 310 papers. The article 'Air Pollution and Dementia: A Systematic Review' was chosen, which summarizes the growing evidence that increased exposure to air pollutants is associated with an increased risk of dementia (Peters et al., 2019).

5. Under the filter-equation: (age) and (dementia), a massive 57.748 results were initially obtained. Following application of the filters, the search was reduced to 285 results. The article 'Young-onset dementia' was chosen. It explains that dementia usually affects people under the age of 65; it can affect adults with neurodegenerative diseases, including Alzheimer's, vascular problems, Huntington's disease or other types of dementia, and can include children whose problems are mitochondrial disorders, lysosomal disorders and leukodystrophies (Kuruppu & Matthews, 2013).

6. Under the filter-equation: (dementia) AND (Spain) and (diet), 146 results were returned. Yet application of the filters reduced this to eight results only. We choose the article: 'Mediterranean Diet and Age-Related Cognitive Decline: A Randomized Clinical Trial' representing epidemiological studies suggesting that a Mediterranean diet, which is high in antioxidants and cardio-protectors, helps to delay cognitive decline. In a population of advanced age, a Mediterranean diet based upon olive oil and nuts is linked to improved cognitive function. The results showed that all cognitive risk-factors decreased significantly ($p < 0.05$) from baseline in the control groups (Valls-Pedret et al., 2015).

7. Under the filter-equation: (dementia) AND (high blood pressure) 2.688 papers were initially obtained and after applying the filters these were reduced to 274. The article we choose was: 'Effect

of Intensive vs Standard Blood Pressure Control on Probable Dementia: A Randomized Clinical Trial'. This article summarizes that there are no established therapies for moderate cognitive impairment and dementia. The goal of this study was to see how intensive blood pressure control affected the risk of dementia (SPRINT MIND Investigators, 2019).

Treatment to a systolic blood pressure goal of fewer than 120 mm Hg compared to a goal of less than 140 mm Hg did not result in a significant reduction in the incidence of probable dementia in ambulatory persons with hypertension. The study may have been underpowered for this end point due to early study closure and fewer than expected instances of dementia.

8. Under the filter-equation: (dementia) AND (hearing loss), 832 results appeared. Application of the filters provided five papers only. The article we choose was: 'Hearing Loss in Alzheimer's Disease Is Associated with Altered Serum Lipidomic Biomarker Profiles'. This paper resumes that according to new research, age-related hearing loss (ARHL) is linked to the onset of Alzheimer's disease (AD). These findings also suggest that phosphatidylcholine, an antioxidant molecule, may have a role in the underlying pathophysiology of ARHL in the context of AD, which has ramifications for our understanding and treatment of both conditions (Llano et at., 2020).

9. Under the filter-equation: (dementia) AND (race), 2170 results were obtained and after applying the filters, 489 results remained. The article we choose was: 'Associations between Race and Dementia Status and the Quality of End-of-Life Care'. In comparison to others, non-Hispanic black and dementia patients receive more intrusive and useless treatment towards the end of life (EOL). The link between race/ethnicity, dementia, and EOL care quality is poorly understood. The goal of this study was to see if there was a link between race/ethnicity, dementia, and proxy reporters' ratings of EOL care quality in older individuals (Luth & Prigerson, 2018).

10. Under the filter-equation: (dementia) AND (VITAMINE D), 797 results appeared and post-filter, only 25 remained for perusal. We chose the article 'Vitamin D deficiency as a risk factor for

dementia: a systematic review and meta-analysis'. The authors suggest that sunlight exposure and a high vitamin D level have both been linked to a lower incidence of dementia (Sommer et al., 2017).

The goal of this study was to see if a lack of sunlight, as well as hypovitaminosis D, is linked to dementia over time. Low vitamin D levels may have a role in dementia development, according to the findings of this comprehensive research. There is a need for more research on the direct and indirect links between sunshine exposure and dementia risk. Large-scale cohort studies with uniform and repeated assessments of vitamin D concentrations or sunshine exposure and dementia outcomes are needed to reconfirm this proposition.

11. Under the filter-equation: (health beliefs) AND (dementia)) AND (Spain) came up with 47 results. Applying the filters reduced these to 22. We choose the article: 'Effects of Combined Resistance and Power Training on Cognitive Function in Older Women: A Randomized Controlled Trial' that compared the effects of traditional resistance training (TRT) and combined power training (PT) and TRT (PT-TRT) on cognitive parameters and serum levels of brain-derived neurotrophic factor (BDNF) in older women. The results indicated that general cognitive function, short-term memory and performance in dual tasks improved similarly after TRT and PT-TRT (Coelho-Júnior et al., 2020).

12. Under the filter-equation: (dementia) AND (depression), 28 results were initially produced and post-filter, only 12 results remained for analysis. Of these, 'Depression: A predictor of dementia' was selected (Deví Bastida et al., 2016). In this context, a similar study by Barnes and Yaffe (2011) found that a third of Alzheimer's cases are attributable to depression. Thus, diminishing this particular risk factor will considerably reduce the possibility of developing this type of the disease.

Discussion

A number of the studies mentioned above confirm that the risk of dementia can be increased by a variety of factors, both modifiable and non-modifiable. Each selected article concludes on how these factors may increase or decrease the risk of developing, aggravating or ameliorating dementia.

In addition, dementia may be a consequence of another medical condition, such as depression. From another point of view, this disease holds high co-morbidity since it may be triggered by other types of illnesses such as hypertension, obesity, diabetes, etc. Yet, advancing age is the most critical factor for the development of this disease (Eccleston et al., 2021; Tsolaki et al., 2017).

In Spain, an estimated 600,000 people aged 60 or over suffer from dementia that is around 6.3% of the population. Spain is one of the countries in the world with a high proportion of dementia sufferers. Yet, in comparison, according to a study by the Vlachos et al., (2021) suggested that 8.7% of the Greek population suffers from dementia. Moreover, according to the latest published World Health Organization (WHO) data from 2021, deaths caused by Alzheimer's/Dementia in Greece have reached 2,085 i.e. 2.09% of all deaths (Kosmidis et al., 2018). The age-specific mortality rate is 5.66 per 100,000 population and Greece ranks 155th in the world. Moreover, recent data suggest that Alzheimer's/Dementia-related fatalities in Spain reached 39,048 in 2021, i.e. 11.59% of all deaths (Darbà & Marsà, 2021).

Despite limited resources and adversity in Greece especially over the last decade and a half, a series of commendable research efforts on the prevalence, incidence, risk-protection factors, clinical manifestations, diagnostic biomarkers, genetic profiles, and key biological mechanisms concerning dementias have been carried out in the past by specialized study groups primarily at the National and Kapodistrian University of Athens and the Aristotle University, but also in other Universities and research bodies throughout the country.

Based on previous studies in Greece, the following areas require improved attention, research extension, and collection of more in-depth data:

● The overall prevalence (frequency in the population) of dementias as well as the prevalence of distinct forms of dementias.

● Recording of dementia incidence in general and by specific types.

● Identifying specific preventive measures (e.g., relating to diet and exercise) and risk factors (e.g.,

smoking, hereditary issues) in the development of dementia in the Greek population.

● Assessment of dementia related financial burden (mostly through quantitative studies) and their specific breakdown into areas including direct, indirect, hospitalizations, medication, co-morbidity, and so forth.

● Network mapping and depiction of available health services for dementia patients.

Conclusions: Before justifying the reasons why we have carried out this review in this rather unorthodox manner, yet via our concrete clinical judgment and critical opinion, it is worth making a few clarifications. The characteristic of irreversibility and organic etiology leads us, from a nursing perspective, to be well-prepared and highly responsive for the need to assess and identify the key characteristics that the person presents in each of the dementia phases through which a patient may pass.

From a nursing point of view, dementia, and the person suffering from it, should be treated as the key-user par excellence in the provision of care. The patient and carer can, with deliberate action, full knowledge and high motivation, slow down the progress of the disease, reduce the risk exposure and improve the daily conditions and their overall quality of life, even when the root causes cannot be eliminated. In this context, our nursing objective as healthcare professionals is to control and limit the secondary processes developing and improve the quality of life of both the patient and the long-suffering caregivers too (Theofanidis et al., 2021).

It is important to add that we have observed that there is considerable room for improvement on the part of healthcare staff. They need concrete training and advice on how to distinguish between different dementia sub-forms and other types of cognitive decline.

Furthermore, it should be noted that depression is a direct factor in developing dementia, with one third of the Spanish population suffering from dementia as a consequence of depression in situ. In summary, we can conclude that excessive alcohol intake, exposure to pollution, hypertension and marked lack of Vitamin D and poor sunshine

exposure, all increase the chances of suffering from dementia. Moreover, positive factors such as moderate caffeine intake, regular exercise and a balanced Mediterranean diet may decrease the risk of developing the disease or slow its progression. It is therefore important for all citizens, to lead a healthy lifestyle.

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