

UNIVERSITY OF WALES TRINITY SAINT DAVID

INTRODUCTION OF RESEARCH

Question: What Factors Lead to the High Prevalence of
Dementia in the UK?

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Abstract

Background: The aim of this literature review is to investigate the factors that contribute to the high prevalence of dementia in the United Kingdom. Twenty qualitative articles were identified through searches in databases such as (Google Scholar, and Libraries Online) and quantified the prevalence of dementia and examine based on your studies.

Methods: Researchers conducted initial interviews with populations in the United Kingdom from 1989 to 2022. Data for algorithmic diagnoses from automated geriatric mental status examinations to computer-assisted taxonomy were obtained in a series of processes, with screening followed by diagnostic assessment, and were then used to estimate the prevalence of dementia.

Results: This review included 20 studies that were eligible for inclusion, of the factors that contribute to the high prevalence of dementia were discovered in the elderly population over 65 years old, with a percentage of 8.3% in a total population of (884,000).

Even so, when compared to the lifestyle of people, women represent the highest high score.

Keywords: Prevalence, Dementia, Alzheimer's, Disease, Pre-stroke, Vascular, Risk.

Conclusion: Based on the outcomes of its factors, the population ageing will significantly raise the number of instances of dementia. Apparently, not all patients with dementia were investigated, and there are unfinished results, implying that they should be studied as soon as possible, particularly in areas where populations have low socioeconomic levels and low education, to reduce diagnosed inequality and improve the health of the elderly, particularly women.

INTRODUCTION

Dementia is a problem that disproportionately affects people over the age of 65. There are approximately 800,000 people who have in the UK, and two-thirds of dementia patients are women (Alzheimer's Society, 2014).

As a result, the circumstances that lead to dementia are primarily associated with old age. Because women continue to live longer than men, they are more likely to be over-represented in the dementia population.

However, there is growing evidence that socioeconomic factors, upbringing, and stress in adolescence - all areas where women as a group might be more disadvantaged than men - may play a role in the development of dementia-causing conditions (Basta et al., 2007; Johansson et al., 2013; Russ et al., 2013).

However, dementia is still viewed solely as a cognitive problem, with little emphasis placed on the social contexts in which it develops and manifests. The UK Mental Ability Act (Department of Health, 2005), for example, "sees principally decision-making as a cognitive process, (ignoring) how social inequality - particularly gender inequality - can constrain decision-making" (Boyle, 2013b: 239-240).

According to a study, there were more than 600 million elderly people worldwide in 2000, accounting for slightly more than 10% of the global population. Since it is predicted that by 2050, this number will have tripled to nearly two billion elderly people, accounting for 22% of the global population. People over the age of 60 are the fastest-growing demographic (United Nations 2007).

The elderly (those aged 65 and above) now constitute 16% of the UK population, up from 13% in 1971. (Office for National Statistics, 2003). Alzheimer's disease will affect 6% of people aged 65 and up, and 8% of people in their 80s, according to estimates.

Dementia, on the other hand, is defined as a group of syndromes that are frequently associated with ageing and are characterised by a decline in cognition severe enough to impair social and/or vocational functioning.

There are many currently over 200 subtypes identified, each with a distinct course as well as minor abnormalities in neuropathology and expression patterns. Alzheimer's disease (AD), vascular dementia (VD), dementia with Lewy bodies (DLB), frontal lobe dementia Pick's disease, and alcohol-induced dementia are some of the major subgroups in this case. AD is the most common subtype, accounting for roughly 70% of all cases (Barberger-Gateau and Fabrigoule 1997; Cowan et al. 2000; Nourhashemi et al. 2000).

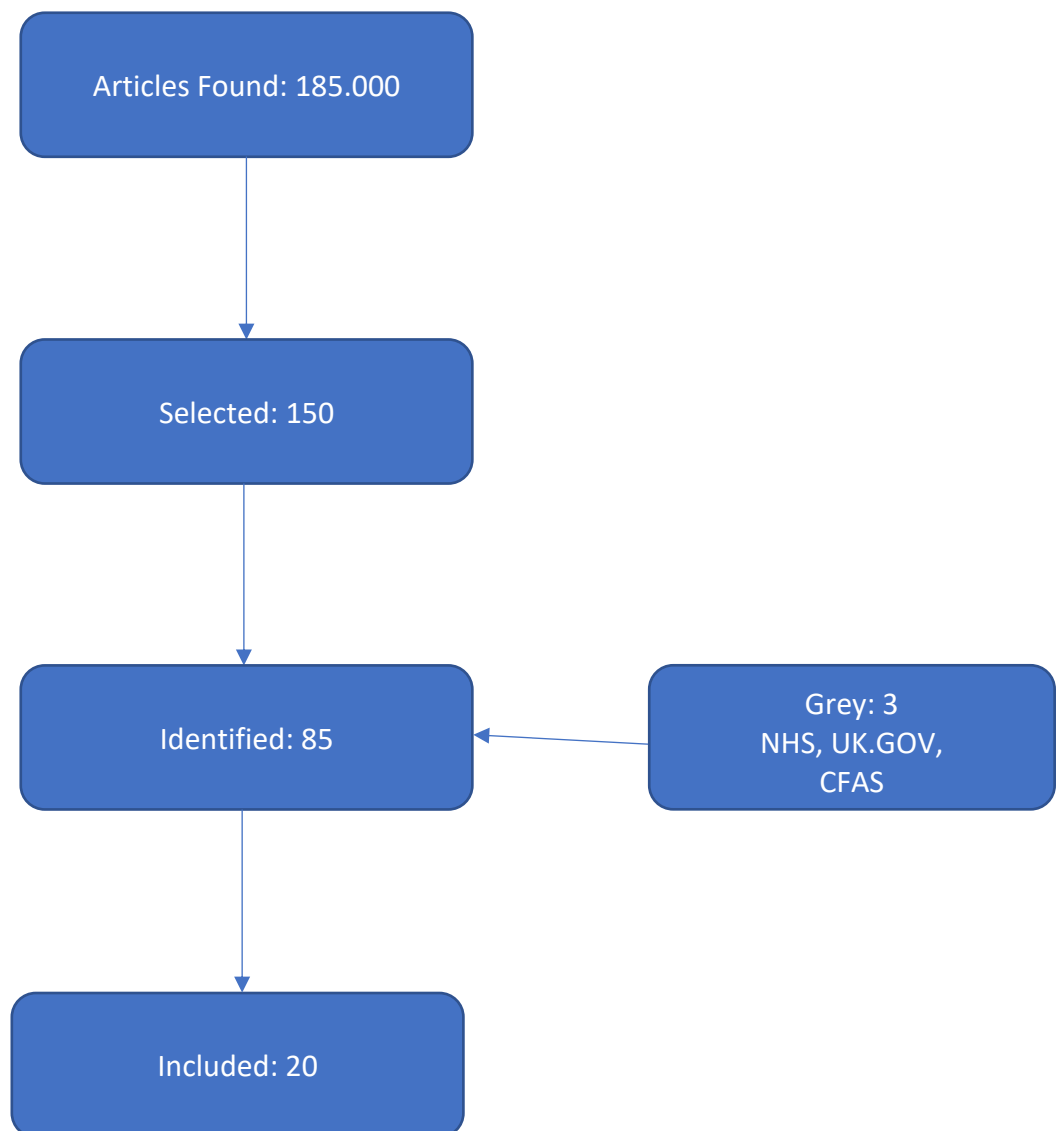
There is more dependency present, as well as increased mortality. Any new evidence on aetiology would be critical beyond public health services, not only for potential patients and caregivers but also financially for benefit plan planning due to patients' high dependency. In

fact, the financial cost of dementia has already surpassed that of cancer and heart disease combined. (Dewey and Saz, 2001).

Methods

Flow Chart

What Factors Lead to the High Prevalence of Dementia in the UK?



This is a collaborative research project with the resources to conduct a comprehensive systematic review of research in the field.

However, some materials are known, so we conducted a systematic search for additional material published since 1998 and up to the present year, using the main electronic sources where I discovered relevant material.

Furthermore, it was clear what material should be reviewed; as factors of the high prevalence of dementia in the UK, and these subjects are typically based on quantitative research methods.

As the Medical Research Council Cognitive Function and Aging Study, CFAS published its review of research on the prevalence and projection of dementia (Dewey and Saz 2001) and used it to search for materials for elaborating the literature. There was little work, such as selecting the question and selecting the author's publications at random. It was simple to prepare and select the primary articles using a flowchart based on the screening separating the literature on a scale of 20 to 25 and with 3 greys.

This systematic literature analysis review will allow us to say something about the factors that contribute to the high prevalence of dementia.

Then, a simple investigation will be conducted in the main electronic health and social research databases: Medline, the NHS website, Google Scholar, and the social science databases included in the Web of Science.

Table 1 shows an illustration of the selection method and its results, including the number of articles identified. To be clear, the research methodology prioritises material in which age and gender categories were central to the reported research.

Following the first round of article selection, the publications that reported primary evidence were divided for the purpose of elaborating the literature to determine which will be the most relevant to the topic.

Eventually, these themes were related directly to the research question that the scientific information had established how to respond to in some cases. In other cases, underlying themes that the authors had not identified were discovered. To structure and analyse the material, the key themes were used.

Furthermore, in some cases, articles that were included suggested other references that could be relevant but had not yet been found; these references have been accessed whenever possible, and the exact criteria used to determine whether they could be referenced (included) or not. Electronic searches, on the other hand, go back to more than 2000 published articles.

Additional searches within the same files were carried out, but with a broader strategy (looking for main terms not only in the title but in the abstract and keywords such as

Alzheimer's, dementia, stroke, and down syndrome publication). This process identified 1,500 publications by comparing them to previously discovered and included material.

Given the limited research on the subject, this was consistent with the indicated purpose of identifying significant aspects contributing to the high prevalence of dementia. However, it is hoped that this review will serve as a catalyst not only for debate but also for further research into the experiences of the high prevalence of dementia in the UK.

The themes

These are the following Thematic groups that were identified as top topics for an initial reading of the included articles: **Dementia, Alzheimer's, Pre-stroke, Vascular dementia, Mixed dementia, Dow Syndrome, and Body Dementia**

Dementia

Ritchie, K. and Lovestone, S., (2002).

According to 2013 population data, there were 815,827 people in the UK with dementia, 773,502 of whom were 65 and older. This equates to one in 79 (1.3%) of the total UK population and one in fourteen (65+) of the population.

As a result, 84% of dementia patients live in England, 8% in Scotland, 5% in Wales, and 2% in Northern Ireland. According to the authors, the prevalence of dementia among several nursing home residents is slightly higher in women than in men at all ages, and increases with age up to 90 years, with a slight decrease among the elderly. The overall prevalence of dementia in care homes was estimated to be 69.0% (62.7% for men and 71.2% for women) by the consensus.

Consequently, if the prevalence of Alzheimer's disease remains stable, the number of people with dementia in the UK could rise sharply to 1,142,677 in 2025 and 2,092,945 in 2051, representing a 40% increase in the next few years, according to the author. 12 years, followed by a 156% increase over the next 38 years.

Alzheimer's

Potential for Alzheimer's disease primary prevention: a population-based analysis of data Norton, S. et al., (2014)

Norton (2014), said concerning the study, the results were acquired after adjusting for non-independence of risk factors, because approximately one-third of Alzheimer's disease total global may be related to the seven potentially modifiable risk factors. The adapted cumulative PAR projections in this case were around 30% across regions.

Also, (Norton), references that this PAR is equivalent to approximately 9.6 million of the estimated 33.9 million Hypertension reported cases in 2010. Reduce the number of each risk factor by 10% or 20% per decade, and the global prevalence of Alzheimer's disease might be reduced by 8% to 15% by 2050, resulting in 8.8 million to 16.2 million cases.

Vascular dementia vs Mixed dementia

Similarities between Alzheimer's disease and vascular dementia
Kalaria, R., (2002)

According to Kalaria, R. (2002), the two most common causes of dementia are Alzheimer's disease (AD) and Alzheimer's disease (DV), because these two types of dementia share pathological characteristics, symptoms, and neurochemicals, and cholinergic treatments that have shown robust, broad, and long-term efficacy in AD are now being investigated for the treatment of dementia-related cerebrovascular disease (CVD).

Furthermore, Kalaria (2002) recognised that dementia in the elderly is a spectrum of pathologies, with pure AD and VD representing the two extremes and mixed dementia (AD with CVD) in the middle, potentially accounting for many cases.

However, because most diagnostic procedures are unfair toward the diagnosis of Alzheimer's disease mixed dementia is rarely detected in the clinic.

On the contrary hand, the risk factors, pathophysiological mechanisms, and clinical symptoms of AD and VD are discussed, with some similarities and differences in cognitive and non-cognitive symptoms. It also talked about the importance of finding a high prevalence of mixed dementia inside this clinical dementia population.

Pre-stroke dementia

Prevalence of dementia in ischaemic or mixed stroke populations: a systematic review and meta-analysis

Savva, G. M., et all, (2009)

The author Savva, G. M., et all, (2009) claims that dementia following a stroke is common at this point. More than one in every five people will develop dementia after a stroke, though some of that dementia may occur prior to the stroke. The apparent decrease in Pre-stroke Dementia (PSD) over time could be attributed to a lower prevalence of pre-stroke dementia. The risk of dementia following a stroke remains significant and predictable, with a high prevalence one year later.

Incidence and prevalence of dementia associated with transient ischaemic attack and stroke: analysis of the population-based Oxford Vascular Study

Sarah, T., P and Peter, M., R., (2019)

Another study reports that dementia prevention was identified in 225 patients aged 3 or 83 years. Its prevalence was significantly lower in TIA patients (4.9% [95% CI 3.4-6.9] vs. 11.8% [10-2-13]) than in stroke patients. (Sarah, T., P and Peter, M., R., (2019).

Dementia, on the other hand, was significantly more common in people who had already had a stroke than in those who hadn't (18% [CI 95% 95-323] vs. 35% [22-53]). This was true for people who had transient ischemic attacks as well as strokes (234% [173-310] vs. 101% [85-119]). (Sarah, T., P and Peter, M., R., (2019).

Findings

Regardless of the study settings, the character traits of these 20 identified study publications are listed in the tables below. They were published between 1998 and 2022; one study was published before 2000, eight respectively between 2000 and 2010, and ten more between 2010 and 2022.

They were mostly conducted in Europe, but the research was based in the United Kingdom. However, studies based on the most statistically oriented worldwide survey for such UK have indeed been conducted.

Many studies have focused on the high rate of Alzheimer's prevalence in the UK, with a difference between men and women.

In other parts of the studies, especially in comparing people's lifestyles to vascular accidents, education had a lower rate than other areas of study.

However, in the United Kingdom, deaths in which vascular disease was identified as the primary cause of death were of particular interest. As a result, this disease causes constriction or obstruction of the blood vessels, resulting in insufficient blood flow and, as a result, people become extremely cold, particularly in the extremities. (Liddell, C., 2016)

An examination of the prevalence of all Alzheimer's diseases in the United Kingdom during the winter and diseases related to the excess of obituaries attributable to cardiovascular disease reveals a range of = 1% (in 1997, 2000, and 2004) to 17%. (2011). (Liddell, C., 2016)

Given that Alzheimer's disease is responsible for 20% of Alzheimer's disease and related diseases, there appears to be little evidence that EWDs are heavily concentrated in this subgroup. (Liddell, C., 2016)

Founds Table

Author	Years	Sample	Quantitative	Strength	Weakness
Blossom Stephan and Carol Brayne	2008	600	Yes	They examined 600 million people in the UK	The test was done only for people around 65 to 85 years
Bond. J	2013	2500	Yes	This study was realized by 2500 peoples	They only investigated Six areas in UK
Huppert, F., A et al.	2000	11956	Yes	The test was ad mistered to 11 956 participates aged 65+	Only 54% of the sample succeeded in the task
Sarah, T., P and Peter, M., R.	2019	92728	Yes	The study was carried out on both females and males with a total of 92728 participants across the UK.	They didn't analyse the impact of the ischemic stroke and didn't categorise their data by the intensity of the event or by age.
Carey IM, Anderson HR, Atkinson RW	2018	130978	Yes	They resisted 130978 participants adult by age 50-79	They only get results from 2181 subjects

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Norton, S. et al.	2014	39.3 million	Yes	According to the study, there will be an 11% decline in the global total of cases of Alzheimer's disease in adults over 60 by the year 2050.	They were unable to analyse some factors, such as the increase in the educational level over the years in a younger generation what kind of dementia risks could there be by 2050?
Atkins, JL. et al.	2020	269.070	Yes	A total of 269,070 elderly people (65-86 years old) were admitted to the hospital with Covid-19, with dementia present in 2.8% of those admitted.	Not all results support simple age-based targeting of the older population.
Princes, M. et al.	2014	850.000	Yes	The statistic of examination are 850.000 people in UK	The rise in the number of people suffering from dementia is not distributed evenly among those affected.
Livingston, G. et al	2020	50 million	Yes	The potential for prevention is high, and it may be even greater in low and middle-income countries (LMICs) where there are more deaths.	The greatest impact is that there are many people in LMIC who do not have access to education.
Ray, S. and Davidson, S	2014	850.000	Yes	The prevalence of late-onset dementia among people aged 65 and up is 7.1%.	This demonstrates that most of the population does not grow dementia; even among the extremely elderly, the majority (3/5) do not develop dementia.
Aarsland, D. and Kurz, M. W	2010	4.336	Yes	The study included 27 studies with a total of 4,336 patients and discovered an average prevalence of 40%.	This study was criticised because most studies were predicated on patients who were referred to neuroscience clinics, which in this case was not representative of unselected PD populations.
Kivipelto, M. et al	2006	1409	Yes	The study found that the Dementia risk score developed using risk factors existing in middle age accurately predicts the future risk of dementia.	The calculation would be impractical for clinical use in the present study since it does not depend on the model in the original coefficients.
Ritchie, K. and Lovestone, S.	2002	5%	Yes	This study had a major impact by classing age-related neurodegeneration as a group of disease entities suitable for treatment development.	However, senility happened in certain aged persons but not all older people accompanied by the changes seen in dementia.

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Drowley, C. and Burns, L.	2022	88	Yes	One of the most important outcomes of the report was the creation of prevalence estimates in the United Kingdom, which allowed health authorities to work toward more specific targets for dementia diagnosis.	These estimates, which are based primarily on age-related risk from the English Longitudinal Study of Aging have many flaws.
Savva, G. M., et al	2009	1782	Yes	A study of 587 people found that 12 symptoms were common.	Vascular risk factors were linked to a lower risk of mistaken identity and confabulation, but also to apathy and depression.
Craig, L., et al	2022	12505	Yes	Out of the 12 505 titles examined, 44 were used in the quantitative analyses.	Random effects models were used to calculate the combined prevalence of dementia at any time after the stroke.
Hendrie, H.C.,	1998	6%-10%	Yes	They were able to identify the causative and associative genes for Alzheimer's Disease AD	The chase for nongenetic risk factors has been less successful.
Kalaria, R.,	2002	8000.000	Yes	The article compared these two types of disease to DV, AD, and their mixed variants, looking at clinical symptoms, risk factors, pathophysiological features, and neurochemical deficits in DV and AD.	The study did not produce concrete evidence that vascular lesions in Vascular dementia are totally irrelevant or posteriorly to a disease's pathogenesis.
Liddell, C., et al	2016	670.000	Yes	Based on these findings, UK jurisdictions have much higher year-to-year consistency in Excess Winter Deaths EWD prevalence rates for respiratory and circulatory deaths than for Alzheimer's Disease and Related Dementia ADRD deaths.	Only one match has been significant for ADRD factors that cause excess winter mortality.

Discussions

Based on this systematic literature review, studies reporting the factors leading to the high prevalence of dementia in the UK were Alzheimer's disease, Pre-Stroke, vascular dementia, and mixed dementia, indicating that these factors are concentrated primarily in elderly populations over 65 years old, with women at the top of the leader board with the highest rate.

According to the Second Office of National Statistics, (2003), 6% of people aged 65 and up will grow dementia, with those in their eighties suffering the most, as shown in Table 1.

Population	2000	2025	2050
65 and over (%)	6.9	10.5	16.2
80 and over (%)	1.1	1.9	4.4
TOTAL (millions)	6055	7823	8900

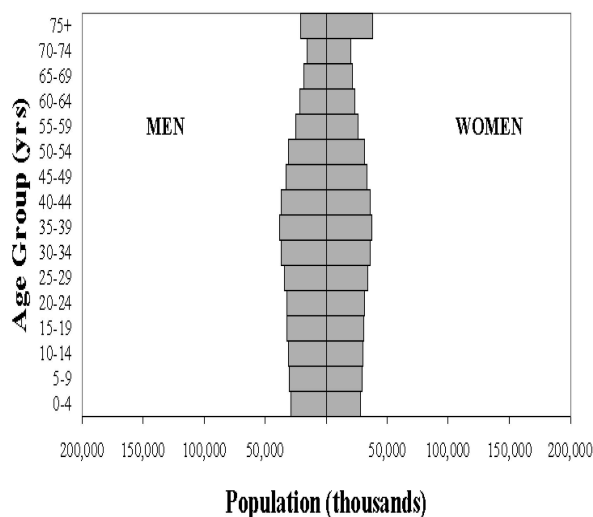
United National Population Division (2017)

The analysis of the data from these 20 selected articles, on the other hand, resulted in the development of the experiences of individuals who were affected by these factors that contributed to the achievement of high Alzheimer's disease statistics in the United Kingdom.

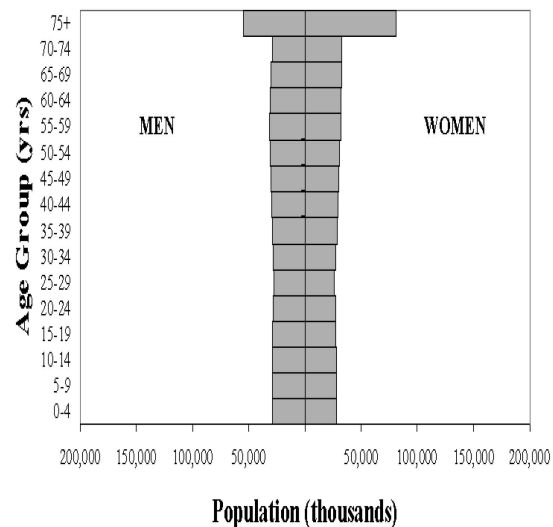
Given that individual studies produced contradictory results, this meta-analysis discovered that the risk of undetected dementia among the elderly is higher for women and people with dementia at younger ages.

	Primary impairments/disability/symptoms	Pathology/causes
Alzheimer's disease	Memory, language and functional disability	Neuritic plaques (proteinaceous extra-cellular deposits consisting mainly of amyloid-beta peptide fragments) and neurofibrillary tangles (twisted fibres of a protein called tau)
Vascular dementia	Poor concentration and communication and physical symptoms such as paralysis or weakness in limbs	Problems of circulation of blood to the brain – related to stroke, high blood pressure (hypertension), diabetes and heart problems
Dementia with Lewy bodies	Hallucinations, spatial disorientation, impaired recent memory and fluctuations in mental performance	Presence of Lewy bodies which refer to abnormal structures within nerve cells of the brain
Frontal lobe dementia	Changes in personality and behaviour, and emotional and language dysfunction. No dysfunction in memory	Frontal lobe degeneration
Pick's disease	Impairment in emotional and social functioning	Abnormalities in Pick's bodies. Focal damage in the frontal and temporal lobes
Alcohol related dementia – Korsakoff's syndrome	Impaired memory, planning, organizing, judgement, social skills and balance	Chronic/excessive alcohol intake

Population Pyramid: High Income (2000)



Population Pyramid: High Income (2040)



(The World Bank Group, <http://devdata.worldbank.org/hnpstats/dp1.asp>).

As a result, the outcomes varied depending on the theme. The theme **"High Prevalence of Prospective Memory Impairment in the Elderly and in Early-stage Dementia: Findings from a Population-based Study,"** for example, reveals that in a study of 388 people involved including very mild dementia, there was also a very high prevalence, the high number of prospective memory impairment, and only 8% of them were successful in

the task. These findings raise concerns about many seniors' safety and well-being (John Wiley & Sons, Ltd, 2000).

As a result, women outnumbered men, which is consistent with the fact that women are more likely than men to have physical disabilities and dementia. In total, 92% of the screened population had prospective memory data.

According to Carey, (2018) said that a study conducted by the cohort in London, England, air pollution and noise have been found to be related to the incidence of dementia. Between 2005 and 2013, subtypes of vascular dementia and Alzheimer's disease were detected in the first dementia diagnosis. Thus, the average annual concentrations of ozone (O₃), nitrogen dioxide (NO₂), and particulate matter with an average aerodynamic diameter of 2.5µm were determined by calculating for 2004 using the 2020 resolution dispersion models.

Estimates of traffic volume, separation from the main road, and night-time noise levels had all been created for the postal code (Light). All exposure factors, including age, gender, ethnicity, and smoking status, were anonymously linked to clinical data via residential CEP.

During the study period (mean = 6.9 years), a total of 2,181 individuals (1.7%, incidence rate of 2.4 per 1,000 per year) received their initial diagnosis of insanity. So, 848 (38.9%) of those diagnosed had Alzheimer's disease, 634 (29.1%) had vascular dementia, and 747 (34.3%) had non-specific reading codes.

As little more than a result, 48 (or 2.2%) of the patient populations were diagnosed with Alzheimer's and vascular dementia. Smokers had lower crude dementia incidence rates based on age and other variables, as the lower risk of dementia in obese people remained because data were not shown (Carey, 2018).

Moreover, reporting a little on the COVID-19 pandemic, another study aimed to identify risk factors in older UK participants associated with hospitalisation or mortality from COVID-19 during the peak of the initial epidemic in England in patients with dementia. These lifestyle factors also include type 2 diabetes, COPD, pneumonia, and depression, as well as atrial fibrillation and hypertension, which emerged as independent risk factors for COVID-19 hospitalisation.

So even though prevalent atrial fibrillation and hypertension were associated with COVID-19 hospitalisation, these diagnoses did not reach significance because of COVID-19 hospitalisation and death ($p > 0.05$).

Conclusion

In summary, the purpose of this review was to investigate the experiences of the population with increased incidence factors for dementia in the United Kingdom. The results of this review vary depending on the size of the population in certain regions, with the elderly population over 65 years old being the most affected, and females leading the way.

Studies, on the other hand, have identified major risk factors such as Alzheimer's disease, pre-stroke, and vascular dementia, among others.

As a result, age is one of the major causes of the increase in dementia, as most elaborated studies have confirmed.

That's not surprising given that the most significant risk factor for dementia in the general population is age. Age and severity of motor symptoms, in contrast, appear to have a combined, non-additive effect on dementia risk.

As a future improvement, it is critical that qualified entities assist higher in the research of values because the numbers are very high and it is concerning for society; additionally, they can provide adequate support so that these groups of elderly people who suffer from this situation are protected.

Finally, assistance is provided by providing peace of mind and security, improving physical and mental health, fostering good relationships, bringing benefits to local communities, preventing hospital admissions - and readmissions - and alleviating social isolation.

Reference:

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