Alzheimer’s Disease

Analysis of the of the Causes and Risk-Factors

Introduction

Alzheimer's disease (AD), the most common form of dementia, causes a progressive neurodegenerative process characterized by decline in memory, cognitive function, and visuospatial abilities. The research conducted was to determine what risk factors are preventable and can reduce the chances of someone developing Alzheimer's disease. It was also to determine what factors can serve as indicators to get tested early through genetic testing to be better prepared for managing treatment for those who develop the Alzheimer's disease

Objectives

When understanding Alzheimer’s, we hope to look at risk factors to account for those that are preventable and those that aren’t.

A few of these factors are cerebrovascular diseases, diabetes, hypertension, obesity and dyslipidemia.

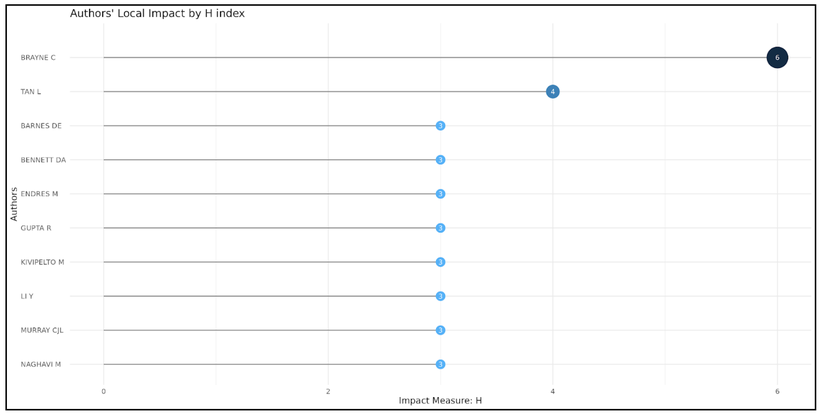
Through our research process, we hope to contribute meaningful findings about risk factors and causes of Alzheimer's to the existing pool of research about preventative care.

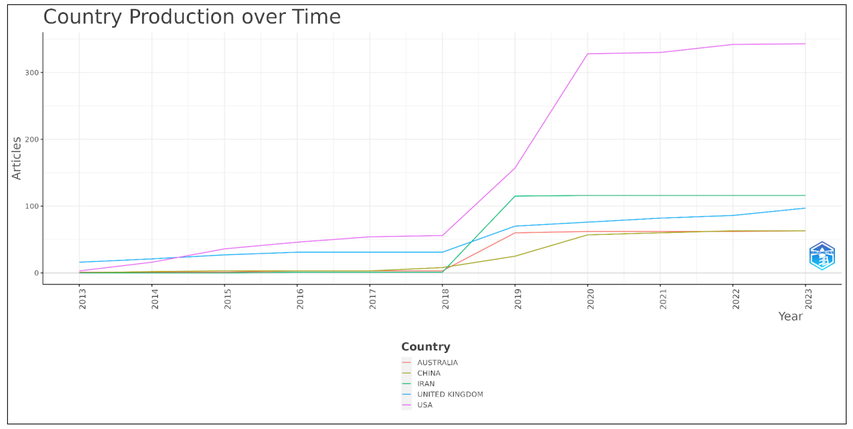
Methods

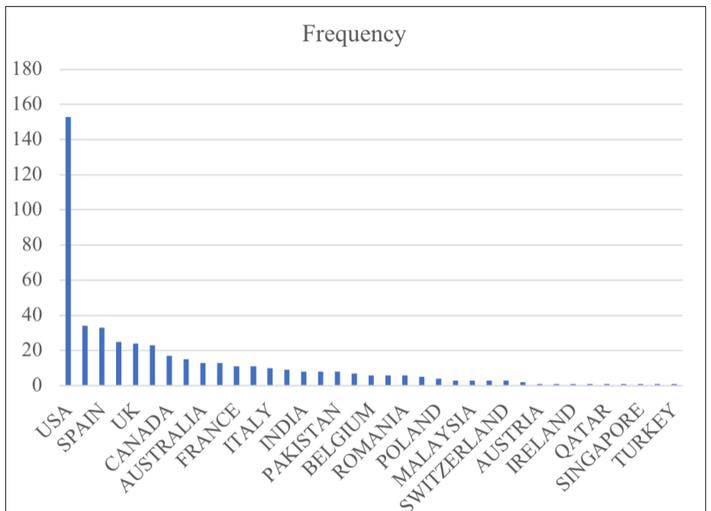
To quantifiably evaluate which causes and risk factors have been most commonly cited and to gauge how much current research is present that has evaluated the relative importance of these factors towards preventative care and early detection of Alzheimer’s, we conducted a bibliometric analyses of 200 of the top-rated studies by inserting relevant

keywords: risk factors+ causes+ alzheimer’s+prevention

This allowed us to measure which authors and countries have contributed the most amount of research in preventative care and early detection care and how emerging research from different regions of the world has validated and confirmed the importance of these factors.







Data Analysis

As shown in the charts, most of the research came from countries, including the USA, Spain, and UK, although the USA has around 4-5 times more research than any other country. So, the preventative risk factors are worth evaluating because the these factors are becoming more relevant. Over time, we've seen a drastic increase with USAs production over time, which shows that research is expanding and becoming more relevant, which makes it worth evaluating these risk factors.

Specifically, the trends focus how over time the production of research articles have steadily grown in the US comparatively than the latter countries like China, Iran, and the UK. The increasing awareness of Alzheimer's ushers in a new age of growth and understanding- a sign of realizing preventative care as a measure to counter Alzheimer's. Our data pool consists of the the frequency of documentation from relevant authors that mainly consist of Brayne C. and Tan L., representing that certain factors that are involved in Alzheimer's are currently being evaluated. As such, the increasing trend line indicates that current research is significant in pushing more justification in answering valuable queries of Alzheimer's as a global issue than just a local issue.

Results

Based on the results from the bibliometric analyses,

The disease pathophysiology, the cerebral accumulation of Aβ peptide could be a strong indicator for Alzheimer’s disease as it may lose control over the amyloidogenic pathway, which is how the neurotoxic Aβ peptides are expelled.

Another important thing to notice is that Aβ derives from amyloid precursor protein (APP), and it is believed that an over-expression of APP can cause an increase in cerebral Aβ peptide, which accounts for its accumulation.

Discussion

More indefinitely, because of the results we can further prove that alzheimer s disease is indeed associated with risk factors that are both preventable and indicators that can foreseen with research . Worldwide, countries with a higher frequency of research such as United States being the highest, is seen to have better contributions when it comes to preventative and early diagnosis care . That advantage acts as a precedence towards predicting and treating many of the common risk-factors such as unhealthy life choices : obesity, and high-blood pressure, to stress and depression, and predicting genetic inheritance of the one or two allele(s) of the APOE-e4 gene

Citations

-Web of Science
-RStudio
-Biblioshiny