

Relationship between Ageing and Neurodegenerative Diseases and Effective Cure

K. Yogarajan¹, Sugasri Sureshkumar²

¹M.P.T, Associate Professor, National Institute for Empowerment of Persons with Multiple Disabilities (Divyangjan) Kovalam, India

²MPT, (PhD), Head of the Department of Neurology, Faculty of Physiotherapy, Meenakshi Academy of higher Education and Research, Chennai, India

Abstract

In modern era, Neurogenerative disease is common issues between elderly population. Generally, it hampers the human brain cell, and it also effects the central nervous system. Accordingly, this disease leads to neurons dysfunctions and aging is the natural factors of these disease. This study has elaborated successfully about the impact of gaining and its interconnection with the neurogenerative disorder. There are some common degenerative diseases that generally observes in the elders and that generally leads to formation of disabilities, neurodegeneration and cognitive effects. Alzheimer's disease can be considered as one of the common neurological diseases that leads to the brain dysfunction, alternation in behaviour and also memory loss for elderly people. Neurodegenerative disease also includes lots of other complicated problems, henceforth, the disease may not be completely understood.

On the other hand, the central nervous system effected in the Parkinson's disease, which is related to neurodegeneration. In this context, rapid formation of neurite can be considered as one of the major reasons of Parkinson's disease. This study also highlights the Impact of neuro degenerative disease on aging and Early Prevention of neurodegenerative disease. It helps to reduce the rate of neurodegenerative disease and innovative intervention plan can decrease the risk and threats of neurodegenerative disorder. Prevention or cure of the neurodegenerative disease depends on pharmacological and nonpharmacological approaches. The early prevention is the best ways that can be able to stop the effects of symptoms and early detection can also increase the hope of cure. From this process, practitioners also get the time for treatment, and it may make positive impact on the individual health and wellbeing.

Keywords

Neurodegenerative Disease, Central Nervous System, Alzheimer's Disease, Parkinson's Disease, Traumatic Brain Injury, TAR DNA Binding Protein 43, n-3 polyunsaturated fatty acid, microRNAs

INTRODUCTION

In recent years, millions of individuals have been severely affected by the neurodegenerative disease, within which the number of elderly populations is one of the most affected. Therefore, neurodegenerative disease also incorporates the death of certain parts of human's brain cells. The characterisation of neurodegenerative disease is always related to the central nervous system of humans, which further leads to the dysfunction of neurons. The term aging can be defined as the alternation of physiology and its working process. As a result, organisms may lose its capability to handle metabolic stress. The study will further shed light on the impact of aging and its relationship with neurodegenerative disease. Current research will also cover the area of taking care of those affected elderly individuals and also find out the process of early intervention.

Human brain is mainly composed of a wide range of nerve networking systems; however, aging affects it severely. Cells inside the brain require an appropriate functioning system to conduct its functions and these cells are mainly known as neurons. There are mainly two types of neurodegenerative diseases that can affect people from all over the world, those are Alzheimer's disease and Parkinson's disease. In this context, it can be observed that. "The Alzheimer society of

UK" has already spent 25.5 million British Pounds in the year 2021. By the year 2022, there are near about 6.2 million individuals affected by these neurodegenerative diseases in the USA. Therefore, the enhancement of neurodegenerative disease occurs with the aging of individuals. The study will also reveal that some other scientists have worked on the neurodegenerative disease and development of risk factors also includes genes of individuals and also the environment. In that case, modern therapeutic approaches also include some drug related treatment processes and non-pharmacological treatment as well. One of the major effective drugs for treating neurodegenerative disease is dopaminergic treatment. Apart from that, a proper diet and consumption of micronutrients can prevent the neurodegenerative disease as well.

LITERATURE REVIEW

Some of the common neurodegenerative disease occurs within elders

Neurodegenerative disease can lead to the formation of disabilities, neurodegeneration and cognitive effects. Therefore, aging can be considered as one of the major factors that is mainly associated with rapid enhancing of elderly population. Some of the common types of neurodegenerative disease are "traumatic brain injury", "Parkinson's disease",

“Alzheimer's disease” and “Amyotrophic lateral Sclerosis”. Alzheimer's can be considered as one of the progressive neurological diseases that leads to the dysfunction of the brain, alternation in behaviour and also memory loss for elderly individuals. Major characterisation of the disease Alzheimer's can encompass the tangles inside the brain and presence of “Amyloid Beta plaques”, along with the Tau proteins [8]. As a result, the brain cells of elderly individuals may suffer from the synaptic loss, death of neurons and reduction of dendritic spines as well. In that case, the aggregation of those previously mentioned proteins can lead to the improper activities of glial cells such as microglia and astrocytes. Almost 90% of neurodegenerative diseases occur due to aging and mutation is one of the identical factors that may lead to neuroinflammation within those patients [3]. Patients with Alzheimer disease can depict the excessive presence of T lymphocytes in the brain tissues of those patients.

in this case. Another significant neurodegenerative issue of the Central Nervous system is “Amyotrophic Lateral Sclerosis”. The disease mainly incorporates the dysfunction of the motor system, dysphagia and also weakness in muscles of the elderly patients. The impact of ALS can be more severe and it can cause the degeneration of the essential part of the brains, as result mortality can be denoted due to respiratory failure. The mechanism of the process of ALS can be noticed as the rapid aggregation of proteins at the oligodendrocytes and its adjacent areas such as the portion of motor neurons. After observation of those elderly ALS patients, scientists have found the presence of “TAR DNA binding protein 43”. It can be considered as one of the major aggregate protein components that may lead to the formation of misfolding of proteins within the brain.

Impact of neuro degenerative disease on aging

Aging can be considered as the inevitable process for all organisms which can lead to the deterioration of health for elderly individuals. According to some previously conducted research, it can be observed that, most of the ageing population can be deliberately affected by Alzheimer's, Parkinson's disease and FTD [1]. This type of neurodegenerative disease can impact negatively on the lifestyles of elders and it is also denoted as a socio-economic burden. In recent years, the population of aging continuously enhances, therefore healthcare practitioners become incapable of preventing those issues. Further progression of those prevention is generally slow due to the lack of understanding of those diseases. An urgent requirement of treating the elderly patients with dignity can be considered as one of the major needs for every country across the world. In that case, neurodegenerative disease can affect the overall lifespan and quality of elders across the community [2]. Neurodegenerative disease can make elderly disabled and they cannot accomplish their day-to-day activities properly.

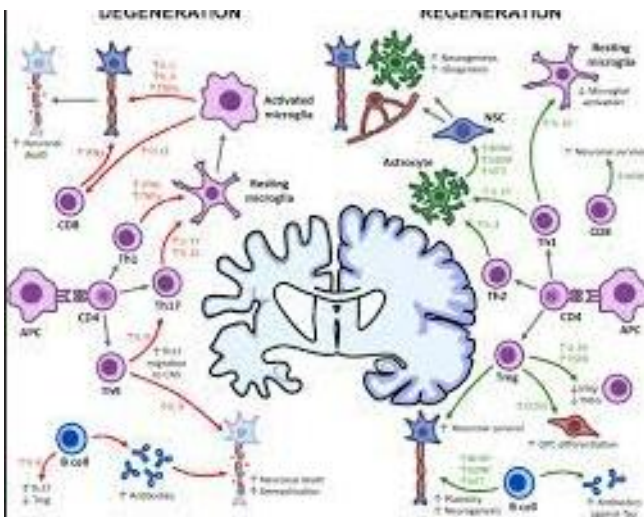


Figure 1: Neurovegetative Disease [8]

On the other hand, the central nervous system includes another disease known as Parkinson's disease, which is highly related to neurodegeneration. The rapid formation of neurite can be considered as one of the major characteristics of Parkinson's disease and that is mainly responsible for the discharge of dopamine in the portion of substantia nigra in case of movement of motor neurons. Further aggregation of α -synuclein in the region of neural cells can effectively generate neurites [10]. As result, monocytes and microglia react deliberately and ultimately cause the generation of neuroinflammation. The damage of sites in brain cells occur due to the secretion of “neurotoxic cytokines” and “chemokines”. From the above discussion, it can be observed that inflammation is one of the major risk of Parkinson's disease. According to some previous studies, the presence of B and T lymphocytes can be found in the peripheral blood of those elderly patients. After generation of Parkinson's disease, alternation the characteristics of B cells and its relevant genes may alter. As a result, a rapid reduction of the presence of B Cells in the blood of patients can be observed



Figure 2: Impact of the disease [2]

A lack of participation of family members in treating elders at their end time, is another major risk factor for those affected elders. Apart from that, neurodegenerative disease widely includes lots of other complicated issues, henceforth, the disease may not be completely understood. Individuals more than 60 years, are generally affected by the complicated brain disease and it is mainly related with age [3]. The occurrence of Alzheimer’s disease can cause the impaired memory and malfunctioning of the brain. On the other hand, elders should experience issues in movement that can be termed as ataxias. Other elders can develop dementia or brain death, which can further lead to mortality of elders. Some other individuals may lose control within muscles and paralysis may occur.

Early Prevention of neurodegenerative disease

Prevention or cure of the neurodegenerative disease also depends on some pharmacological and nonpharmacological approaches for the affected elderly individuals. In that case, alternation in lifestyles can be considered as one of the primary steps to prevent the adverse condition of neurodegenerative disease [4]. The reduction rate of neurodegenerative disease also includes a proper sleep, cognitive activities, healthy diet and supplements. From this study, it can be observed that almost 60% of individuals from all over the world have reported to be affected by dementia and Alzheimer’s. Diet can be considered as one of the essential approaches to prevent neural disease. Therefore, the rapid consumption of fish, algae and shellfish can be effective in recovering memory and maintaining learning for those individuals [11].

This food contains “n-3 polyunsaturated fatty acid”, DHA and is also enriched in micronutrients, henceforth these substances have neuroprotective properties [5]. The role of antioxidants can be easily noticed and polyphenols can be used for treating neurodegenerative disease. Polyphenol have the properties of activation of genes, chelation, scavenging and also the regulation of function of mitochondria. Not only polyphenols, also curcumin have the capability to protect neural disorders of elderly individuals. Curcumin can be taken as another essential “anti-amyloid drug” that can deliberately reduce the inflammation of cytokines in the oxidation process [6].

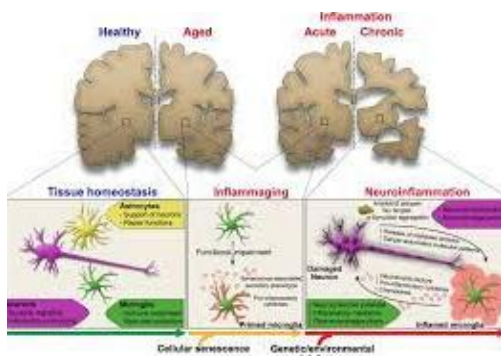


Figure 3: Early prevention of those disease [6]

In contrast, physical activities can be taken as another beneficial prevention process for long term cure of those elderly individuals. After doing exercises for long term, plasticity can be denoted at the hippocampus portion along with neurotrophic growth factor 1 and “Vascular Endothelial growth factor”. During exercise, the accumulation of ketone bodies can generally occur at the hippocampus portion of the brain [7]. In that case, patients with neurodegenerative disease should conduct exercise properly at least for 15 minutes per day and sometimes healthcare givers can help in this process. Additionally, the role of pharmacological approaches and healthcare practitioners in preventing the neurodegenerative disease can be significant. Apart from that, computational studies have drastically improved bioinformatics to evaluate the molecular level of drugs used in the treatment process [8]. Due to the excessive loss of dopamine, some of the ancient medications can be effective and also measured through in Silico approaches. After proper consultation of the disease Levodopa can be used for Parkinson's patients. Apart from that, some other types of dietary supplements such as “Cobalamin”, “Folate”, “Omega 3 fatty acid” and “Acetyl L carnitine” can be highly suggested for the different types of neurodegenerative disease. Some other types of effective drugs for the curing process of neurodegenerative disorders are “Amantadine”, “Galantamine”, “Donepezil”, “Apomorphine”, “Memantine”, and “Dantrolene” [9]. Some other types of phytochemicals can be further suggested for the treatment process, that may help in binding energies, those substances are “baicalin”, “curcumin”, “stigmaterol”, “emodin” and “eriodyctiol”. Another essential inhibitor for L dopa drugs can be obtained from a plant species named Ginkgo Biloba, and this kind of drugs can manage the dynamic molecular aspects for L Dopa management [10]. According to the “Food and Drug administration” committee, some other drugs such as Rivastigmine and Donepezil can be effectively utilised for the long-term treatment purposes.

METHOD

This research study has applied a secondary qualitative method for conducting the research study. This section will future explain the process of data collection and analysing the data for the study. There are different and justified reasons for selecting a secondary method for the study. One of the biggest reasons for choosing this process is to improve the experience and gain knowledge [11]. This is the method that can only provide a lot of time to gather knowledge on the subject matter. On the other hand, this method also helps to know the previous history of the neurodegenerative disorder and its sources. This research study used various journals, magazines, newspapers, and other sources that help to assemble the information. On the other hand, this project also takes essential information from MEDLINE, AHEM, PubMed, and various authentic websites that help to provide important facts for the study. On the other hand, the secondary qualitative method is quite easier than other

processes of data analysis and assembling. This process does not need high-quality technical knowledge to analyse the information [12]. On the other hand, this process is much more time-saving and it is not required so much time for collecting information for the research work. This method also does not require heavy effort and that is why individuals can concentrate their research work and progress.

Accordingly, the secondary qualitative method is the platform that can provide world-based data in an ethical and systematic manner. It also maintains the security of the data and also always takes responsibility for using the data. This study is based on the neurodegenerative disorder and nowadays this disease affects the maximum number of people in the world. That is why it is impossible to visit all the places and collect information from there [13]. The secondary qualitative process provides golden opportunities to stay connected with the world through an internet connection and smart electronic gadgets. From these details, it has been observed that 6.2 million people are affected by this disease in the USA. Medical professionals try to provide patients with huge support for improving their quality of life and developing their daily lifestyles. Moreover, this process helps to provide a raw set of data and also helps to learn about the use of data in the research that assists to increase the value of the study of research.

Furthermore, it can be said that the secondary qualitative method is justified for the research due to it gives a strong structural pattern of the data that helps to maintain the information in a systematic manner. This process uses different types of data such as statistical, descriptive, and core information that are also able to open a new field of research [14]. The future researcher can use this article for further research due to it having the opportunity to predict the future condition of the subject matter. This process also helps to identify the dissimilarities between current and previous treatment and management processes of neurodegenerative disorders.

DISCUSSION

From this above study it can be stated that neurodegenerative disorder is one of the serious conditions that can damage the nervous system and cells. This disease is also responsible for damaging the connection between the body and brain which is essential for coordination, sensation, strength, cognition, and coordination [15]. In the modern era, this disease affects millions of people worldwide. There are three kinds of degenerative nerve disease such as Amyotrophic lateral sclerosis, Alzheimer's disease, and Friedreich ataxia. This disease generally happens by damaging the neurons in the brain. The neuron is the main unit of life that can help to build the connection with the body neurons, and it includes the brain and nervous system. This disease has an interconnection with age and this disease has not any kind of curable assurance. Medical professionals can only prevent or reduce the risk of disease. Treatment may lower the trouble and control the symptoms for a certain time

period. Neurodegenerative disorder has some common symptoms such as loss of control in muscles, taking a long time to learn new things, memory loss, social withdrawal, and depression [16]. On the other hand, these kinds of patients are also suffering from *"impaired mental function"*, disorientation, hallucinations, experiencing unknown feelings and thought delusions, and other major issues.

MRI is the main test that can detect the issues and this test is basically done for knowing the presence of microRNAs. miRNA always contains potential biomarkers for this kind of disease. miRNA is a module that is based on a single-stand and plays an essential role in gene expression regulation. From this study, it has been seen that damaged and dead neurons are responsible for these diseases, and they are not able to replace themselves. Increasing the age of humans, the brain shrinks parallelly, and nerves cannot work properly also [17]. This is one of the major reasons for neurodegenerative disorders. Genetic and environmental factors also make a huge impact on neurodegenerative disorders. It has been seen that some combination of genetic and environmental factors such as long-term exposure can increase the toxins and some chemical formulation that is not beneficial for health and it raises the risk of these kinds of disorders. In several cases, relatives are able to pass down the mutated genes that can occur and develop the disorder. Some abnormal proteins of the brain are also responsible for neurodegenerative disorders. These abnormal proteins damage the nerve cells in the brain and beta-amyloid proteins also develop Alzheimer's disease and increase the symptoms and risk as well.

The human brain can compose the networking system and it can be down due to increasing age. This is a functional system that is controlled by nerve cells, and it includes taking, watching, speaking, climbing, and all kinds of activities. From this study, it has been seen that 6.2 million people are affected by these diseases in the USA. generally, the elderly population gets affected by this disease and it hampers the individual quality of life as well [18]. Accordingly, this disease also impacts the individual psychological condition and also affects the health and other external and internal organs of the body. From this study, it has been recognized that neurodegenerative disease can lead to various kinds of disabilities and cognitive effects. Aging is the major factor that increases the issues and raises the symptoms in the older population. In this context, it can be said that Alzheimer's is one kind of progressive neurological disease that depends on brain dysfunction. It is also responsible for abnormal and unknown behaviours and also leads to memory loss for older people. On the other hand, brain cells also suffer from the damage or death of neurons, synaptic loss, and dendritic spines reductions also. In the human brain, there are various kinds of abnormal proteins that also lead to dysfunction of the brain and also affect the other organs as well. Parkinson's disease is another and serious condition of the brain that includes the nervous system. In this case, the rapid formation of neurites can be responsible for these kinds of diseases. In this disease patients are suffering from the movements and

also face difficulties from tremors, and it can be considered as an early sign of Parkinson's disease [19]. Tremor is one kind of shaking that happens in the head, eyelids, and limbs.

Lewy body dementia is another dangerous neurodegenerative disease, and this condition also happens to the abnormal proteins in the brain. In this context, the alpha-synuclein protein can be responsible for making chemical reactions in the brain that lead to behaviour and mood change and cognitive decline. On the other hand, Huntington's disease is another disorder that forces one to lose control of the body and the primary symptoms of this disorder is irritability, depression, poor decision-making skill, and few voluntary movements. From several studies, it has been observed that individuals face difficulties in walking and swallowing which also make an impact on their personalities as well [20]. ALS or Amyotrophic lateral sclerosis is one of the uncommon neurodegenerative diseases and it targets all nerve cells of the brain that are essential for voluntary muscle movements. Muscle weakness and stiffness are early symptoms of this disease. day by day, the symptoms will progress, and it can push to disable a person. At this time individuals can face issues in eating, walking, breathing, and speaking also. It can be said that heavy depression, smoking, alcohol intake, stroke, and brain tumours increase the risk of neurodegenerative diseases and increase the major chances of damaging the health or essential organs.

From this study, it has been seen that aging is one kind of inevitable process for all kinds of organisms and it also leads to health deterioration for older individuals. Maximum Numbers of older and aging populations are constantly affected by FTD, Parkinson's disease, and Alzheimer's disease. These kinds of disease impact negatively and also affect the surroundings. In the current year, medical professionals try to prevent the disease by using various kinds of intervention processes and strategies [21]. They suggest that patients increase their healthy food habits and intake of shellfish, algae, and fish which is much more effective for recovering memory and preventing neural disease.

From this above research, it has been seen that almost 90% of neurodegenerative disorder happens due to aging and mutation is the identical factor. It may responsible for neuroinflammation in patients and who are suffering from Alzheimer's can able to depict a huge amount of presence of T-lymphocytes in the tissues of the brain.

CONCLUSION

This study is based on the neurodegenerative disorder and its connections with aging. From the above research study, it has been seen that in the modern era neurogenerative disorder effecting maximum people of the world and it makes a negative impact on society also. This study has explained the classifications and types of neurogenetic disorders. All type of disease has earlier symptoms that can be more painful and dangerous. It has some common symptoms such as loss of muscles, memory loss, change in behaviours, and other major difficulties. Some disorders can be genetic, and they can

reduce the quality of life of a person. Accordingly, this disorder is also responsible for hampering the external and internal organs of the body. On the other hand, this paper also focused on some common neurodegenerative disease that occurs among elders and mentioned that Parkinson's disease, traumatic brain injury, Amyotrophic lateral Sclerosis, and Alzheimer's disease are common neurodegenerative disease. It generally leads to brain dysfunctions, behaviour alteration, and other issues such as memory loss in elderly individuals.

There are some abnormal proteins such as Amyloid beta protein and tau protein that affects the entire nervous system and also damage the neurons. Furthermore, this study has also shed light on the impact of neurodegenerative disease on aging. This section has explained about the aging population and also elaborate on their difficulties and issues. From this study paper, it has been seen that medical professionals try to implement innovative strategies to prevent the disease and also reduce the symptoms of individuals. It helps to relieve the person from the hard life and difficulties. From several studies, it has been seen that individuals can not able to understand the nature of the disease which is the main reason that they are unable to get proper treatment. Neurodegenerative disease can make the elderly disabled and they cannot accomplish their daily activities. The above study also highlights the early prevention process based on some nonpharmacological and pharmacological approaches. There are primary steps to detect the issues and prevent these issues. This approaches also helps to reduce the rate of neurodegenerative disease that includes proper diet, sleep, healthy supplements, and cognitive activities. At last, it can be said that early prevention or intervention plans for neurodegenerative disease can be a blessing and save the future generation as well.

REFERENCES

- [1] Cunnane, S.C., Trushin, E., Morland, C., Prigione, A., Casadesus, G., Andrews, Z.B., Beal, M.F., Bergersen, L.H., Brinton, R.D., de la Monte, S. and Eckert, A., 2020. Brain energy rescue: an emerging therapeutic concept for neurodegenerative disorders of ageing. *Nature Reviews Drug Discovery*, 19(9), pp.609-633.
- [2] Daniele, S., Giacomelli, C. and Martini, C., 2018. Brain ageing and neurodegenerative disease: The role of cellular waste management. *Biochemical pharmacology*, 158, pp.207-216.
- [3] Elfawy, H.A. and Das, B., 2019. Crosstalk between mitochondrial dysfunction, oxidative stress, and age related neurodegenerative disease: Etiologies and therapeutic strategies. *Life sciences*, 218, pp.165-184.
- [4] Galts, C.P., Bettio, L.E., Jewett, D.C., Yang, C.C., Brocardo, P.S., Rodrigues, A.L.S., Thacker, J.S. and Gil-Mohapel, J., 2019. Depression in neurodegenerative diseases: Common mechanisms and current treatment options. *Neuroscience & Biobehavioral Reviews*, 102, pp.56-84.
- [5] Hansson, O., 2021. Biomarkers for neurodegenerative diseases. *Nature medicine*, 27(6), pp.954-963.

- [6] Hou, Y., Dan, X., Babbar, M., Wei, Y., Hasselbalch, S.G., Croteau, D.L. and Bohr, V.A., 2019. Ageing as a risk factor for neurodegenerative disease. *Nature Reviews Neurology*, 15(10), pp.565-581.
- [7] Maher, P., 2019. The potential of flavonoids for the treatment of neurodegenerative diseases. *International journal of molecular sciences*, 20(12), p.3056.
- [8] Maiti, P. and Dunbar, G.L., 2018. Use of curcumin, a natural polyphenol for targeting molecular pathways in treating age-related neurodegenerative diseases. *International journal of molecular sciences*, 19(6), p.1637.
- [9] Nuñez, M.T. and Chana-Cuevas, P., 2018. New perspectives in iron chelation therapy for the treatment of neurodegenerative diseases. *Pharmaceuticals*, 11(4), p.109.
- [10] Strafella, C., Caputo, V., Galota, M.R., Zampatti, S., Marella, G., Mauriello, S., Cascella, R. and Giardina, E., 2018. Application of precision medicine in neurodegenerative diseases. *Frontiers in neurology*, 9, p.701.
- [11] Ruggiano, N. and Perry, T.E., 2019. Conducting secondary analysis of qualitative data: Should we, can we, and how?. *Qualitative Social Work*, 18(1), pp.81-97.
- [12] Sherif, V., 2018, May. Evaluating preexisting qualitative research data for secondary analysis. In *Forum: qualitative social research* (Vol. 19, No. 2, pp. 26-42). Freie Universität Berlin.
- [13] Mey, G., 2022. Qualitative methodology. In *International Handbook of Psychology Learning and Teaching* (pp. 1-26). Cham: Springer International Publishing.
- [14] Taylor, B., Henshall, C., Kenyon, S., Litchfield, I. and Greenfield, S., 2018. Can rapid approaches to qualitative analysis deliver timely, valid findings to clinical leaders? A mixed methods study comparing rapid and thematic analysis. *BMJ open*, 8(10), p.e019993.
- [15] Zhao, F., Li, B., Yang, W., Ge, T. and Cui, R., 2022. Brain-immune interaction mechanisms: Implications for cognitive dysfunction in psychiatric disorders. *Cell Proliferation*, 55(10), p.e13295.
- [16] Mirzapure, S., Tiwaskar, S. and Pathade, A., 2022. Dementia In Old Age: Prevention, Intervention & Care. *Journal of Pharmaceutical Negative Results*, pp.156-164.
- [17] Connell, E., Le Gall, G., Pontifex, M.G., Sami, S., Cryan, J.F., Clarke, G., Müller, M. and Vauzour, D., 2022. Microbial-derived metabolites as a risk factor of age-related cognitive decline and dementia. *Molecular Neurodegeneration*, 17(1), pp.1-26.
- [18] Giménez-Llort, L. and Castillo-Mariqueo, L., 2020. PasoDoble, a proposed dance/music for people with Parkinson's disease and their caregivers. *Frontiers in Neurology*, 11, p.567891.
- [19] Faizan, M.S. and Muzammil, M., 2020. Hand tremor suppression device for patients suffering from Parkinson's disease. *Journal of medical engineering & technology*, 44(4), pp.190-197.
- [20] Joveini, G., Malja, M. and Hejazi-Shirmard, M., 2022. Effectiveness of Person-Environment-Occupation Model on a Pediatric Neurodegenerative Disease: A Case Report of a Child with Ataxia-Telangiectasia. *Occupational therapy in health care*, pp.1-12.
- [21] Zarotti, N., Coates, E., McGeachan, A., Williams, I., Beever, D., Hackney, G., Norman, P., Stavroulakis, T., White, D., White, S. and Halliday, V., 2019. Health care professionals' views on psychological factors affecting nutritional behaviour in people with motor neuron disease: A thematic analysis. *British Journal of Health Psychology*, 24(4), pp.953-969.