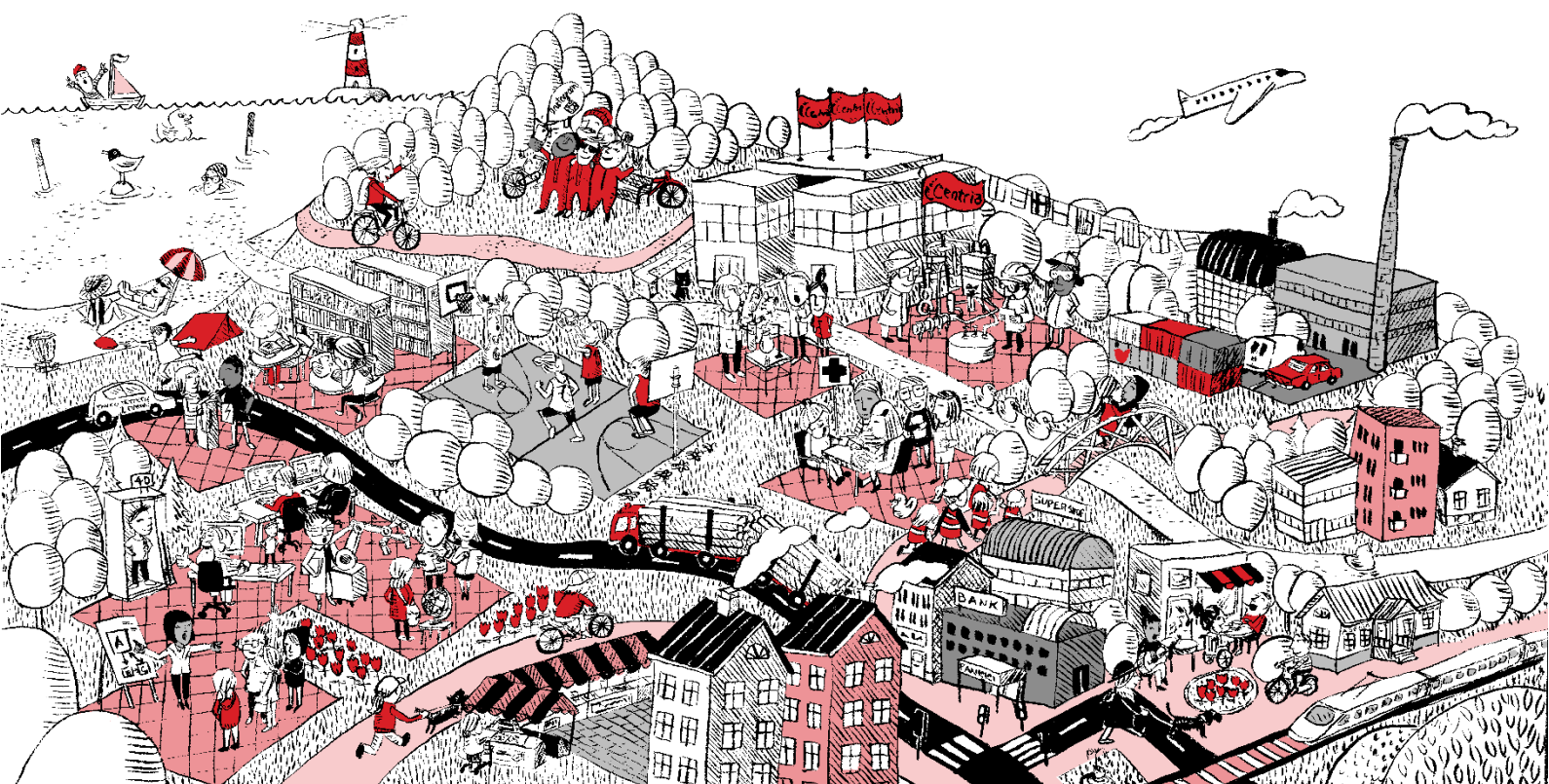


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**THE ROLE OF REHABILITATION IN IMPROVING QUALITY OF LIFE OF PATIENT
WITH PARKINSON'S DISEASE**
A Literature Review

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CENTRIA UNIVERSITY OF APPLIED SCIENCES
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ABSTRACT



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<p>The purpose of this research was to describe what rehabilitation support Parkinson's patients need to cope with their day-to-day life as they continue with treatment. The goal of the study was to give a scope on the provision of health education, promotion, and advancement of the life quality of Parkinson's disease patients.</p> <p>The authors used literature review to conduct the research and it provided an overview on how rehabilitation can improve quality of life in patients with Parkinson's disease. The articles used were selected from various databases such as CICAHL, EBSCOhost, Pubmed and SAGE Premier. They were used in archiving evidence-based and reliable articles for the thesis. Inclusive and exclusive criteria method was strictly followed. The results were analysed using content analysis. Eight selected articles were assessed and evaluated by the authors.</p> <p>There are three main types of rehabilitation therapies, namely occupational, physical and speech therapy. These different forms of treatments perform unique roles that help patients to get better and they share results of active and healthy lifestyles. These therapies can be offered in two forms: inpatient and outpatient rehabilitation treatments. Rehabilitation aims offer a very controlled, medical surrounding that will help an individual's body regain strength and heal, aid the body in fast relearning of lost skills, and initiate new improvised ways of carrying out activities that currently seem difficult.</p>		
Key words Nursing intervention, Parkinson's disease, quality of life, rehabilitation, support		

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1 INTRODUCTION

Parkinson's Disease (PD) is a common neurodegenerative disorder. In Finland, about 16000 PD patients get reimbursement of Parkinson's medications (Terveyskirjasto 2018). Several non-motor manifestations arise; the typical clinical features involve a movement disorder consisting of bradykinesia which is slow movement and an impaired ability to move the body swiftly on command, resting tremor and rigidity with postural instability occurring at a later stage. The causes of PD are unknown, but some genetic risk factors have now been characterized and several genes that cause rare familiar forms of PD are known. PD is the second most common neurodegenerative disease after Alzheimer's disease; with an aging population, both the prevalence and incidence of PD are expected to increase by more than 30% by 2030. (Schalling, Johansson, & Hartelius 2017.)

Caregivers of individuals living with PD have consistently faced challenges in care provision due to the advancing nature of this neurological illness. The disorder tends to stay in the society, there has been a significant concern, care, and responsibility that the community has decided to implement to help and support the PD patients. Therefore, rehabilitation is an essential aspect in PD patients as it helps them maintain and regain functional capabilities (Hurt, Chaudhuri, Moss Morris, Samuel & Brown 2016). The purpose of this research is to describe what rehabilitation support Parkinson's patients need to cope with their day-to-day life as they continue with treatment. The critical information gathered here will help provide and expand the knowledge on rehabilitation of patients with Parkinson's disease. This research will be carried out by literature review, gathering recent evidence-based study about the topic will be analysed.

2 THEORETICAL BACKGROUND

This chapter will look at the theory and the background of the thesis topic. These include brief description of Parkinson's disease, its causes, symptoms, the different stages of the diseases, nursing interventions and rehabilitation as a support system.

2.1 Parkinson's Disease

PD is a general neurodegenerative disorder easily recognized by motor and non-motor symptoms. The motor symptoms are bradykinesia, tremor, postural disorder and rigidity. The progressive nature and the detecting symptoms of PD are continuously lowering the quality of life. The number of Parkinson's disease and Parkinsonism-related disorders patients have increased in the aging era in the recent past (Olanow, Klein & Schapira 2018). Parkinson's usually develops between the age of fifty and seventy but also, if the disease is hereditary, it can start as early as thirty to forty years. However, the disease is rarely inherited. The average onset is sixty years. In Western Europe, for example, the number of PD patients over the ages of forty-five to fifty years is speculated to double by the year 2030 from a record of about 4.5 million in the year 2005. (Perepezko, Hinkle, Shepard, Fischer, Broen, Leentjens & Pontone 2019.)

Parkinson's Disease is a very multifaceted illness that consists of a wide range of complications; hence medical care alone is very insufficient to curb the harm. Due to this complex nature of PD, there is a need to implement and employ more than 18 varying disciplines, that comprise of physiotherapy and psychology in caregiving and supporting the patient. (Ahlskog 2020.).

2.1.1 Causes of Parkinson's disease

In Parkinson's disease, specific nerve cells or neurons in the brain gradually break down or die. Most of the symptoms are due to a loss of neurons that produce a chemical messenger in a person's brain called dopamine. When dopamine level reduces it causes abnormal brain activity, leading to symptoms of Parkinson's disease. The specific cause of the disease is unknown yet, though several certain factors appear to contribute to the development of the disease, for instance, genes and environmental triggers.

Most scenarios surrounding PD are idiopathic (Olanow et al. 2018). Scientists and researchers have also noted that many changes happen in the brains of people with Parkinson's, it is not clear why these changes happen. Some of the changes occur in the presence of Lewy bodies (Jenner 2018).

The risk factors for Parkinson disease includes age, heredity and gender. Parkinson's disease is more diminutive in young adults compared to elderly adults. The condition usually starts early or later in life, the risk of having the disease increases with age. It usually develops in people after the age of 60. Moreover, heredity in the family history is one of the risks of having the disease; if a family member has been diagnosed with Parkinson's disease, there is a higher chance that another member will develop it as well. The risks are if several people have been diagnosed with the condition in the family. Male gender is at a higher risk of developing Parkinson's disease than female. The increased exposure to herbicides and pesticides may also increase the chances of developing the disease (Olanow et al. 2018).

2.1.2 Symptoms of Parkinson's Disease.

The symptoms related to Parkinson's Disease progress promptly. The pre-symptomatic signs are linked to autonomic dysfunctions and smelling, motor disorders during the symptomatic stage, and numerous cases of dementia in the final settings. (Olanow et al. 2018.) This slow advancement of Parkinson's disease is due to the affliction of the olfactory bulb and the brain's medulla oblongata by neurodegeneration in the pre-symptomatic stage. Since PD patients constantly undergo non-motor psychiatric, autonomic and cognitive symptom experiences, primarily depict how the PD affects the non-dopaminergic neurons. (Berganzo, Tijero, Gonzalez, Somme, Lezcano, Gabilondo, Fernandez, Zarranz & Gomez 2016.)

The main symptoms of Parkinson's are rest tremors, muscle stiffness and slowed movements. If the patient has two of the three main symptoms it is most likely the patient has Parkinson's (Terveyskirjasto 2018). The motor symptoms are resting tremor, lack of movement or muscular rigidity, bradykinesia, and gait. In the early stages, most symptoms are tremors, loss of smell, trouble when sleeping, troubled walking and constipation. Other symptoms for Parkinson's disease include depression and anxiety. The resting tremor, a symptom in PD individuals, is quickly notable as it frequently presents itself at the distal fragments of fringes, majorly the hands. The symptom disappears once the patient's body is active or asleep. However, these symptoms are rarely detected in some

patients due to difficulty distinguishing dystonic or essential tremors. At the same time, other studies show that 25% of individuals with PD have no tremor symptoms at all (Berganzo et al. 2016).

Bradykinesia is another motor symptom in Parkinson's disease affecting movement. This hallmark result in slowness in locomotion, thus causing problems in walking and difficulties in motor skills crucial in an individual's daily activities. Bradykinesia also leads to loss of facial expressions and body language, causes micrography and reduced limb swing. Rigidity is a symptom that causes an increased muscle tone. There is a gamut of rigidity to dystonia in which paired muscles contract simultaneously (Berganzo et al. 2016). Rigidity and tremor symptoms can be portrayed on a patient simultaneously, termed as the cogwheel phenomena (Sveinbjornsdottir 2016).

Postural instability can be detected in the later stages of PD. The patient is unable to maintain an upright and steady posture or even unable to prevent falling back. Such a hallmark of backward fall or retropulsion is associated with PD balance issues. Gait or walking complications in PD are also contributed by postural instability and bradykinesia as the disorder advances. Later stages of slow arm swing are prolonged and reduced steps when walking and the appearance of a shuffling gait. The gait effect in PD also includes the body's tendency to move forward in rapid festination. Individuals with progressing PD might also have the freezing impact in which a person's feet feel glued to the floor. The voice becomes soft or starts strong but quickly fades away. Individuals will speak in a monotone due to losing a normal tonal variation and voice emotion (Berganzo et al. 2016).

Complications in Parkinson's disease usually come with other problems. These problems also occur because PD is a movement disorder. However, some symptoms do not entirely occur due to movement. They are the non-motor symptoms that include thinking difficulties, depression, and emotional changes, swallowing problems, chewing, sleeping problems, bladder problems and constipation are the difficulties that a person diagnosed with Parkinson disease may experience. Other problems that may come with Parkinson's disease include blood pressure changes, smell dysfunction, fatigue, pain, and sexual dysfunction. (Schalling et al. 2017.)

Non-motor symptoms are anosmia, insomnia, depression, anxiety and dementia. Anosmia is when an individual has disturbances in their sense of smell and experiences significantly reduced compassion. Insomnia is where patients face many difficulties while sleeping, and some may have vivid dreams due to side effects from PD naps taken during the day. Some even vandalise and talk during their sleep, especially in the rapid eye movement sleeping stage, a disorder caused by PD. This incorporates both

upset night-time rest and excessive daytime drowsiness (Berganzo et al. 2016). The unsettling night-time rest happens in 60–98% of patients and is associated with severeness of the illness and levodopa consumption (Beitz 2019).

Depression and anxiety are common non-motor symptoms by PD patients that range in severity and steadily improves once there is an ongoing PD treatment. Antidepressant medications, cognitive behavioural therapy (CBT), and group support or family support therapies are recommended to aid in reducing instances of depression in PD patients. Anxiety as well as depression occur in PD patients and can be dire or mild. In advanced PD cases, anxiety requires medication and psychotherapy like CBT (Marsh 2018). Fatigue is a very complex hallmark in Parkinson's disease patients that has never been understood fully. It is, however, known to be associated with sleep complications and depression. Reduced cognitive skills in progressed PD cases, especially in the elderly, thinking problems and decision-making complications are prevalent. Patients have many times reported difficulties in performing daily activities and multitasking. PD medications given to these individuals also bring about a confusion effect. Psychological association in PD is, by all accounts, expected (Seritan, Ureste, Duong & Ostrem, 2019). Numerous patients with PD may develop dementia, commonly ten years or more after the beginning of brain indications. (Berganzo et al. 2016).

2.2 Nursing interventions for rehabilitation of Parkinson's disease

The nursing care provided to the individual with this disease permeates the aspects of this condition related to symptomatology; it is multisystemic, progressive and incurable. In the rehabilitation context, the nurse, as a professional member of the multidisciplinary team, has an important role in health promotion, treatment of complications, and adaptation to the limitations imposed by the disease. The nurse directs the plan of care to meet the needs of each patient and family, guiding the search for the patient's independence and their physical, cognitive and behavioural limits through an appreciation of his/her potential. (Tosin, Campo, Andrade, Oliver & Santana 2016.)

The adoption of standardised nursing care prevails, based on legal, ethical, scientific and methodological premises. Thus, care grounded in the nursing process enables interactivity, since it is based on mutual relationships of nurses, the multidisciplinary team, the patient and the family (Kneafsey, Clifford & Greenfield 2018). Beyond the completion of the nursing process steps, based on the use of a language classification system, the universality of information is ensured, which provides

the dissemination of concepts and the practical applicability of interventions. (Pearson, Field & Jordan 2019.)

A recent study has shown that twice as many clients have positively rated their nurses as the most essential partners in understanding their local PD services than their neurologists. Nurses play a critical role of giving care to individuals with this neurological disorder. It is essential that nurses have valuable information to their patients since patients are guaranteed access to a variety of diets, in which nurses will take account movement problems or gulping issues that might lead to malnutrition for example. It is also essential for nurses to remember giving clients enough time in answering when addressing them. (Alzahrani & Venneri 2018.)

The fundamental ability of nurses is supposedly measured, monitored and maintained. The nurses' roles require a high level of autonomy, decision making and discretion requires highly skilled nurse interventions. In aiding patients with the disorder to live a healthy lifestyle and a quality life, nurses are required to collaboratively work as a specialised multidisciplinary group. When pharmacists and nurses collaborate together they can effectively enhance the type of service and care given to PD patients (Flaherty & Bartels 2019).

2.3 Rehabilitation as support for patients with Parkinson's disease

There are three types of rehabilitation therapies namely, occupational, physical and speech therapies. These different forms of treatments perform unique roles that help patients in slowing down the progression of the sickness and they share the same results with active and healthy lifestyles. These therapies can be offered in two forms which are inpatient and outpatient rehabilitation treatments. Inpatient rehabilitation therapy refers to a patient's treatment in a hospital or clinic before being officially discharged. Patients undergoing dire symptoms require this kind of therapy for recovery until they are in good shape to go home. Outpatient rehabilitation treatment is regarded as the treatment acquired by patients when they are not admitted to a medical centre. It offers a mixture of physical, occupational, speech therapists, psychologists and pathologists. This type of rehabilitation therapy provides several good results and is recommended to PD patients with non-motor criterion. (Pappa, Doty, Taff, Kneipmann & Foster 2017).

Parkinson's disease patients require rehabilitation for a fully supported treatment. The body's frequent physical activities are crucial in containing and managing Parkinson's disease and Parkinsonism. A recent study from the University of Maryland Parkinson's Disease and Movement Disorders Centre has increased the understanding of the impacts of physical and cognitive training in PD, it has also come up with relevant recommendations for PD patients. Occupational rehabilitation therapy tends to help individuals learn movement techniques such as rolling over and getting out of bed, coming out of a car, or even rising from seated postures. Therapists also suggest that physical support should be given to PD patients when performing usual basic activities as; shower stools, shower grab bars, and elevated toilet seats (Pappa et al. 2017).

Physical rehabilitation therapy is a form of therapy that provides treatment for PD patients who experience pain and face difficulties while moving, living everyday life and functioning. This form of therapy helps in relieving pain after an injury, stroke, or surgery and assists patients in learning how to use assisting devices like canes and walkers when recommended by a therapist, the main goal is to ensure pain relief and patient's mobility recovery. This includes special exercises, massage, gait reduction and balance, cardiovascular strengthening, pain management, casting, splinting and the use of orthotics (Seung-Nam, Wang & Park 2019).

Rehabilitation tries to offer an actual controlled, medical surrounding that will help an individual's body regain strength and heal, aid the body in fast relearning of lost skills, and initiate new improved ways of carrying out activities that used to be difficult. Rehabilitation positively helps individuals return to their previous activities like sports, basic daily activities, or work. Evidence-based approaches to rehabilitation indicate that the best remedy of exercise is that it improves physical functioning, strength, balance, gait, and health-related quality of life among people with PD. Parkinson's disease patients have consistently shown significant changes and developments from these rehabilitation therapies, and most of them are either completely healed or effectively back to their functionality. (Kessler & Liddy 2017.)

According to (Terveyskylä 2017), exercise is a fundamental form of rehabilitation in PD patients at all stages of the disease. It can also reduce pain caused by stiffness. PD patients should find suitable form of exercise that suits them, they also must consider the length they were doing to avoid straining, rest is also important. Swimming, Nordic walking and gymnastics are usually suitable for many patients. Walking daily as a regular exercise strengthens muscles and improves the walking strides and speed. The motor symptoms of PD can affect patient's quality of life, for instance tremor. It will instil fear in

them because they are afraid to drop things or if they end up being fed due to severe tremor. PD patient's self-esteem should be upheld and confidence by encouraging them to exercise daily and continue doing daily house chores such as washing dishes, vacuuming, and going to the shop. Exercise helps keep them fit and healthy thus reducing motor symptoms, preventing other diseases and improving quality of life.

Speech rehabilitation therapy provides PD patients with speech ailments a chance of acquiring skilled treatment and hence improvement. Speech therapists can help treat various problems related to communication, voice and fluency in speaking. Speech therapy also helps induce improved voice challenges. The goal of therapy is to combine speech-related mechanisms with language use. Standard techniques adopted by speech therapists include lingual drills in practising communication skills, articulation therapy on how to produce specific sounds by demonstrating tongue movements and finally the feeding and swallowing therapy where the lips, tongue and jaws are exercised to help strengthen the mouth and throat muscles respectively. The results are aimed at the PD individuals with such speech issues to communicate in more understandable and effective ways (Schalling et al. 2017).

Occupational and physical therapists have much experience identifying tools and utensils to be employed by PD patients while eating. Knives will keep the food on forks, spoons, cups and small bowls that will effectively treat PD patients with coarse tremors, rigidity, or slowness to feed themselves comfortably (Pappa et al. 2017). Additionally, allowing individuals to enjoy their meals independently is a sceptical therapy that helps individuals maintain self-respect and independence. With these different rehabilitation therapies, PD patients increase their endurance, general body fitness, strength, and energy levels, elevate moods, and decrease anxiety.

Nutrition from different forms of foods is essential in maintaining good health thus improving functional capacity. PD comes with weight loss, therefore, close monitoring of the weight and amount of food taken is necessary. If the weight drops by 5% in a month, it is important to find out the cause (Parkinsonliitto ry 2021). Proper diet is of importance with PD patients as they experience constipation, dehydration, and drug interactions with certain foods. Therefore, the nutritionist and nurses play a crucial role in ensuring PD patients are well educated and informed about the importance of diet. Most patients experience constipation due to slowed bowel movement, thus food rich in fibres and enough fluids will help reduce constipation. In addition, salt intake increase can help with the balance of blood pressure. Most patients suffer from orthostatism. Parkinson's drugs can cause dehydration thus leading to electrolytes imbalance, confusion and kidney problems. Some drugs such

as Levodopa can be hindered if taken shortly after enjoying a high protein meal because it involves the same process. It is advisable not to take the medicine and high protein meal at the same time to maximise medicine's effectiveness. PD medicines are recommended to take on an empty stomach or 45-60minutes before food due to slowed digestion (Terveyskylä 2017).

Well-being of the body and mind helps in the rehabilitation process of PD patients. Being sick with a progressive and long-term illness affects the patient emotionally and psychologically. Exercise, listening to music, nature and other hobbies can help in reducing stress. Moreover, spending quality time with friends and relatives played an important role in improving a patient's mental status. Peer support and support from loved ones is important in PD patients. Patients should be open to talk about their feelings with the person they trust because if the mood is low for a long time, they won't have pleasure in anything they do hence leading to depression. They can also seek professional help. (Parkinsonliitto ry 2021.)

The PD symptoms can also affect patient's sexual life. Mostly men are affected by erectile dysfunction, orgasm difficulty and premature ejaculation whereas women experience decreased libido, dryness, orgasm difficulty and urine leakage when having sex. Stiffness in the body can be challenging because the patient can be having pain or difficulty in moving, especially when the disease has progressed. The challenge of sexuality affects both partners equally. Hypersexuality is usually an embarrassing thing for a spouse and other loved ones, so discussing it is important. Also, peer support can be helpful. It is essential to educate patients of the challenges and how to cope with them. For example, some symptoms can be a result of drug side effects. (Parkinsonliitto ry 2021.)

Doctor's recommendation is required when applying for Kela support. The Parkinson's Association organises courses to support PD patients and their relatives. The information provided by experts help patients cope with their day-to-day activities and find new ways that support their mental, physical and social wellbeing. Kela also arranges free group or individual rehabilitation such as physical, functional and speech therapy. Patients can also apply for other courses, for example, courses for elderly patients with multiple illnesses. (Parkinsonliitto ry 2021.)

3 PURPOSE, OBJECTIVE, AND RESEARCH QUESTIONS

The purpose of this research is to describe what rehabilitation support that Parkinson's patients need to cope with their day-to-day life as they continue with treatment. The goal of the study is to give a scope on the provision of health education, promotion, and advancement of the life quality of PD patients. The study gives a broad overview that addresses the research question:

1. How does rehabilitation help PD patients cope in their daily life?

4 RESEARCH METHODOLOGY

Research methodology is a method and technique used to process, summarise information, select and classify them. We will be reading and will critically assess the trustworthiness of studies/ articles using the narrative literature reviews with the help of Centria`s library HAKA. We will also look at research that has been written and described as the most important on our topic.

4.1 Literature review

Literature review is a methodology that is used in dissertations. A literature review involves the employment of an existing secondary course or literature which has very fundamental findings besides the theory and methodological contributions of a specified subject or topic. Therefore, this methodology attends to all academic journals and articles that are available. Other reliable studies indicate that literature is the most essential part of all studies and research disciplines. When going through a journal article which is self-reliant on a discipline, an author therefore narrates points by describing prior studies while assessing the study area hence motivating the research defending the research questions. (Snyder 2019.)

The authors preferred using a literature review, because it was seen to be fit and necessarily useful in identifying all important articles before doing research on the topic. Using this method has helped in building and understanding the topic wildly and as well as improving when writing summaries on related topics. This was proven to be a perfect way of avoiding the idea of anticipating any author, because this method is reliable. The examination of evidence-based articles on previously related studies was very important to provide sufficient knowledge for this thesis.

4.2 Data collection and search

The selection of data in this thesis was collected from a literature review with the help of the Centria University of Applied Sciences library Haka, guidance of a librarian and scholar articles. Authors had free access to scientific journals that were about nursing. Academic Search Elite (EBSCO), CINAHL complete, SAGE publications, E-Library and PUB-med were utilised. The author selected the found

articles based on the thesis topic, key-words, and research question. This was mainly focused on the topic presented Parkinson's disease and its relation to rehabilitation and the coping of patients diagnosed with the disease. When searching in Centria's international materials for nursing students HAKA, Pub-Med provided 126,124 results on PD disease. Meanwhile SAGE journals provided a result of 17992, and other sources gave larger numbers of articles on the topic, which made it slightly difficult and time consuming to be categorised to the the most important sources for the topic and to the least applying source on the topic.

Below table contains articles that were searched and used in the thesis. This was carefully looked at by the authors and found to be fit for the thesis. This mainly focuses on publications in PUBMED, CINAHL and SAGE.

TABLE 1. Data collection and the found results.

SEARCH WORDS	PUBMED	CINAHL	SAGE journals
FIRST STEP			
PARKINSON'S DISEASE	126,124	10,284	17992
REHABILITATION IN PARKINSON'S DISEASE	822	527	3900
daily life of Parkinson patients	1 441	11	7375

SECOND STEP	PUBMED	CINAHL	SAGE JOURNALS
A LITTLE MORE SPECIFIC SEARCH			

diagnosing of Parkinson's disease	47.063	4	2683
rehabilitation as a support for PD patients	3,691	1	3240
coping in daily life for Parkinson patients	54	573	1782

4.3 Exclusion and Inclusion Criteria.

In conducting the database search, the authors chose a broad inclusion criteria for extracting information; the aim was to develop classical details to aid in the compilation of this thesis to suit its purpose. This, among others, included the following: full-text PDF articles, free of charge articles, emphatic studies, articles that are published in the English language, articles that are available and accessible, the relevance of the presence of keywords and articles published between 2016 and 2021.

TABLE 2. Exclusion and Inclusion criteria for selecting articles

Inclusion criteria for articles	Exclusion criteria for articles

Articles associated with giving support to patients with Parkinson disease	Articles not associated with giving support to patients with Parkinson disease
Articles published after 2016 until 2021	Articles published before the year 2016
English articles	Articles not in English
Articles that answer our research question and purpose statement	Articles that do not answer our research question nor purpose statement.
Full-text articles were accessible	Articles that were not full text and which were not accessible

There are 8 articles that critically analysed and were seen to answer the best to the authors research question were selected and added in the appendix.

4.4 Data analysis

Trustworthiness is focused on when using qualitative content analysis. Qualitative content analysis is frequently used for qualitative data analysis. Terminologies like transferability, authenticity and credibility are used mostly to show trustworthiness in a content analysis. The main goal is to analyse documents verbally and categorise the content qualitatively. Additionally, content analysis makes verbal and precise descriptions about a phenomenon. Producing information that is representable in a clear and understandable way in one of the main goals. In analysing data, it is broken into pieces and built in a new way using appropriate themes found in the data. Content analysis is a method that can be either inductive or deductive. These both types of content analysis process consist of three phases which includes the preparation, organisation and reporting of the results. The inductive content analysis processes the content of the data, it also includes categories and abstraction. The deductive content analysis produces the body of the analysis with appropriate data. In deductive content analysis,

the organisation phase includes categorization matrix development depending on the research purpose. (Elo, Kääriäinen, Kanste, Pölkki, Utriainen & Kyngäs 2014.)

Data analysis is defined as a process of evidence synthesis that involves the extraction of detailed examples, the method, setting, and type of participants from the original study, including aggregation of initial findings into categories and further into synthesis. Content data analysis that will be used to analyse data is qualitative; with the assistance of the data analysis, the researchers will be able to comprehend and analyse the collected information that has been previously studied according to the chosen topic of the research. (Holloway & Galvin 2017.)

The authors used these methods to best analyse the articles that answer their research questions. Before using any articles or sources, the trustworthiness of the content and how best it answers to the topic were assessed by the authors. Enough time was taken to prepare, research and analyse the used articles. As mentioned before, the selected articles were carefully analysed according to their reliability, trustworthiness, evidence based, that is within the required time late and most importantly that answers to the topic and research questions.

The table below highlights a summary of the results that answered research questions based on research articles used. Summary of the results was done, and content analysis of the data put in the form of the table below.

TABLE 3 Content analysis of the selected articles.

Raw data	Subcategory	Main category
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<p>The signs and symptoms of Parkinson's disease, as well as the care needs.</p> <p>Stages of Parkinson's disease and its associated care requirements.</p> <p>Parkinson's disease symptoms</p> <p>Management during rehabilitation.</p>	<p>Understanding Parkinson's disease</p>	<p>Rehabilitation</p>
<p>Getting a sense of the local care options and crucial contact points for persons with Parkinson's disease and their caregivers.</p> <p>Creating a local healthcare network</p> <p>Patients and care partners will benefit from conversation training.</p> <p>Assisting with self-management.</p>	<p>Aspects of patient care delivery</p>	<p>Health improvement</p>
<p>Clinical examinations for Parkinson's disease and their caregivers and the consequences for care needs. Nurses must be aware of what is crucial while managing Parkinson's disease in clinics and at home.</p>	<p>Clinical support and interventions</p>	<p>Medical assistance</p>
<p>Adapted to a particular technological environment.</p> <p>Determine how technology plays a part in the care model:</p> <p>Self-management and online monitoring for patients is crucial.</p> <p>Nurses need to improve communication and assistance during rehabilitation care.</p>	<p>Technological importance</p>	<p>Ease of service delivery</p>

<p>Putting work aside and making time for family and friends.</p> <p>Make family time enjoyable and positive.</p>	Family time	Social support
<p>PD patients with speech ailments have a chance of acquiring skilled treatment and hence healing.</p> <p>It helps uphold the verbal and non-verbal communication skills</p>	Improving quality of life	Speech rehabilitation therapy
<p>It provides treatment for PD individuals undergoing pain and facing difficulties moving, living everyday life and functioning.</p> <p>Improves mental status.</p>	Self-management	Physical rehabilitation therapy
<p>In the rehabilitation context, the nurse, as a professional member of the multidisciplinary team, has an important role in health promotion, treatment of complications, and adaptation to the limitations imposed by the disease.</p>	Unified therapy	Teamwork
<p>Occupational therapists play a vital role in promoting independence in PD patients.</p> <p>They evaluate, plan activities and tools that can help PD patients continue with their daily lives thus improving quality of life.</p>	Independence	Occupational therapy
<p>A Balanced diet improves general well being and ability to deal with the symptoms that come with disease.</p>	Balanced diet	Nutrition

<p>However, some foods affect the functionality of the medicine. Nutritionists play an important role in educating PD patients about meal plans.</p>		
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5 TRUSTWORTHY, ETHICAL CONSIDERATION AND VALIDITY

In a qualitative research trustworthiness or true value is an important aspect. While conducting research, transparency is prime to the usefulness and honesty of the found information. Trustworthiness refers to the degree of data assurance, proper clarification and ways used to ensure the quality of research. In a study, the researcher should show or establish the formalities and procedures for the research to be viewed as worthy (Connelly 2016).

As mentioned previously data is collected from reliable sources including Centria university's library page and other sites that are reliable and currently updated. There are many foundations that are meant to provide care and information to patients with Parkinson's (PD). This research will focus more on enlightening the care and support that is given to people suffering from Parkinson's, whether the sickness is in its starting stage, middle or final stage.

5.1 Ethical consideration and validity

Nursing research involving people must adhere to the procedures needed to ensure that the study recognises defined ethical principles as a guide to proper quality and reliable study. Ethical principles explain the system of moral values as it concerns the extent to which research procedures should comply with legal, social obligations and professionally guide the study of sampled participants. (Pilot & Beck 2017.)

Ethics is defined as a study that looks at how people are guided with norms or standards of behaviour in relationship with one and the other. It is seen as an ethos way of life and social norms for the conduct that dignifies between acceptable behaviour and unacceptable behaviour. Different societies have legal boundaries which dictate behaviour, while ethical norms are broader than the law. Society applies laws to ensure moral standards. Moral values are continuously being taught in the life of individuals and it also affects the way someone interacts in the society. The influence of research ethics in our daily life requires that researchers must protect and secure the dignity of their subjects and publish well the information that has been researched. Ethics issues in research have various steps that are essential when starting with a research proposal, writing and eventually accepting leading to the actual research study. The collection of relevant methodology is to employ the important ways of

collecting data, presenting the research findings and the interpretation of the findings leading to the presentation in a logical way. (Pilot & Beck 2017.)

Reliability and validity have been defined as the degree to which the findings of a research are consistent, accurate irrespective of the total number of the population that have referred to a particular study that can be produced under a similar methodology. (Lynch, 2014.) Validity was maintained by using articles with scientific origin, up to date information, that is abiding by the rule of using articles not less than ten years. Articles for this thesis were collected from a reliable database collection in the University's library such as ESBCO-host, SAGE and others. The criteria for choosing these articles were the reliability and whether the articles could be inclusive or exclusive validity. Validity, rules whether the research applies to the measures that were intended for the result. (Lynch, 2014.) This is measured by checking if the generally set questions have gotten the result to it.

6 RESULTS

This chapter shows the findings from the analysis of the articles that answered research questions. Eight articles were analysed and summarised, the articles are shown in the (APPENDIX 1) at the end of this research. The research articles referred to in this thesis portray the relationship between nursing interventions and the improvement of the quality of lives of PD patients.

The fundamental aspect of nurses is supposedly measured, monitored and maintained. The nurse's roles require high level autonomy, decision making and discretion that requires dilution by highly skilled nurse interventions. In aiding patients with the disorder to live a healthy lifestyle and a quality life, nurses are required to collaboratively work as a specialised multidisciplinary group. When pharmacists and nurses collaborate effectively it enhances the type of service and care given to PD patients (Flaherty & Bartels 2019).

Routine rehabilitation of PD patients by nurses in their activities of daily living, go a long way into easing their symptoms and fostering their independence in their daily living. While it is evident that Parkinson's disease is a self-limiting and progressive disease, the articles emphasise on the need for nursing interventions with respect to physical rehabilitation, that goes along with other therapies involving, drug therapy occupational and speech therapy. (Alzahrani & Venneri 2018).

The nursing care provided to the individual with this disease permeates through the aspects of this condition related to symptomatology; it is multisystemic, progressive and incurable. In the rehabilitation context, the nurse, as a professional member of the multidisciplinary team, has an important role in health promotion, treatment of complications, and adaptation to the limitations imposed by the disease. The nurse directs the plan of care to meet the needs of each patient and family, guiding the search for the patient's independence in relation to his/her physical, cognitive and behavioural limits through an appreciation of his/her potential. (Tosin et al. 2016.)

Rehabilitation positively helps individuals return to their previous essential activities like sports, basic daily activities, or work. Evidence-based approaches to rehabilitation indicate that the best remedy of exercise is that it improves physical functioning, strength, balance, gait, and health-related quality of life among people with PD. Parkinson's disease patients have consistently shown significant changes

and developments from these rehabilitation therapies, and most of them are either completely healed or effectively back to their functionality. (Kessler & Liddy 2017.)

There are three critical types of rehabilitation therapies namely, occupational, Physical and speech therapies. These different forms of treatments perform unique roles that help patients fully recover, and they share critical results of active and healthy lifestyles. These therapies can be offered in two forms: Inpatient and Outpatient rehabilitation treatments. Inpatient rehabilitation therapy refers to a patient's treatment in a hospital or clinic before being officially discharged. Patients undergoing dire symptoms require this kind of therapy for recovery until they are in good shape to go home. Outpatient rehabilitation treatment is regarded as the treatment acquired by patients when they are not admitted to a medical centre. It offers a mixture of physical, occupational, speech therapists, psychologists and pathologists. This type of rehabilitation therapy provides several services and turns out to be recommended to PD patients with non-motor paradigms. Outpatient rehabilitation therapy has constantly enhanced the quality of life of people (Pappa et al. 2017).

Parkinson's disease patients require rehabilitation for a fully endorsed treatment. The body's frequent physical activities are crucial in containing and managing Parkinson's disease and Parkinsonism. A recent study from the University of Maryland Parkinson's Disease and movement disorders centre has increased the understanding of the impacts of physical and cognitive training in PD and coming up with relevant recommendations for PD patients. Occupational rehabilitation therapy tends to help individuals learn movement techniques such as rolling over and getting out of bed, descending off a car, or even rising from seated postures. Therapists also suggest that support be given to PD patients when performing usual basic activities like; shower stools, shower grab bars, and elevated toilet seats (Pappa et al. 2017).

Physical rehabilitation therapy is a form of therapy that provides treatment for PD individuals undergoing pain and facing difficulties moving, living everyday life and functioning. This form of therapy improves movement after birth recovery, relieves pain, ensures rehabilitation after an injury, stroke, or surgery and assists patients in learning how to use mobile devices like canes and walkers once recommended by a skilled therapist, the essential plan to be developed is to ensure relieving pain and ensure a patient's mobility. This includes special exercises, massage, gadget practising, gait reduction and balance, cardiovascular strengthening, pain management, casting, splinting and the use of orthotics (Seung-Nam, Wang & Park 2019).

Occupational and physical therapists have much experience identifying tools and utensils to be employed by PD patients while eating. Knives will keep the food on forks, spoons, cups and small bowls that will effectively treat PD patients with coarse tremors, rigidity, or slowness to feed themselves comfortably. Additionally, allowing individuals to enjoy their meals independently is a sceptical therapy that helps individuals maintain self-respect and independence. With these different rehabilitation therapies, PD patients increase their endurance, general body fitness, strength, and energy levels, elevate moods, and decrease anxiety. (Pappa et al. 2017).

Speech rehabilitation therapy provides PD patients with speech ailments a chance of acquiring skilled treatment and hence healing. Pathologists can help treat various problems related to communication, voice, language fluency and fluency in speaking. Speech therapy also helps induce improved voice challenges. The goal of therapy is to combine speech-related mechanisms with language use (Crowley, Nolan & Sullivan). Standard techniques adopted by speech therapists include lingual drills in practising communication skills, articulation therapy on how to produce specific sounds by demonstrating tongue movements and finally the feeding and swallowing therapy where the lips, tongue and jaws are exercised to help strengthen the mouth and throat muscles respectively. The results desired are aimed at the PD individuals with such speech issues to communicate in more practical and effective ways (Schalling et al. 2017).

7 DISCUSSION

Based on the articles of this research, the findings converge with studies showing that PD tends to occur more frequently in men, especially in the age group over 60 years. Regarding the progression of the disease, the results of this study have representativeness, showing that the neuro-degenerative process of PD is nonlinear but concerned with individual aspects. However, the decompensation rate is much faster in the early stage of the disease, leading to functional impairment of the patient that should be evaluated to consider their characteristics. In addition, patients in the early stages of the disease can demonstrate more doubts and anxieties about this disease (Olanow et al. 2018). This requires that the rehabilitation nurse take a more careful look at the educational aspects, giving information about current symptoms to these patients, considering predictive ones. Therefore, nurses who provide care to patients with PD should consider the magnitude of aspects. Their interventions should respect the peculiarities inherent to the individual process of the disease progression (Parkinsonliitto ry 2021).

About nursing interventions, the results demonstrate the effectiveness of the methodological tools used in this study, which enabled the achievement of objectives. The cross-mapping identified nursing language terms prescribed by nurses in the records of patients with PD who participated in the rehabilitation program and compared them to the standardised NIC language, which is globally recognized. Further-more, as part of the nursing process, nursing interventions are identified in the care plan, which is developed to eliminate or minimise a nursing diagnosis, seeking to achieve the goal or pre-established outcome. Thus, the interventions mapped and described in this study are highlighted, directly linked to educational practice, and used by nurses as the primary tool for health promotion. As a change strategy in technical healthcare models, health promotion has been used for decades as an alternative for expanding the quality of health and life of the population by intervention with individuals and the understanding of the health/disease process, such as social production. (Tosin et al. 2017).

In the context of neurological rehabilitation, the actions for health promotion are aimed toward recovery, but mainly, for the adaptation to limitations imposed by the disability, according to the needs of each patient/ family. These actions are primarily guided by functional, motor, psychosocial and

spiritual aspects. Nurses must establish a bond with the patient/family and guarantee guidance for the health/disease process, providing the necessary resources for the facilitation and implementation of this learning. The individual's autonomy is essential within this relationship, asserting the principles of citizenship and democracy, socially committed to improving health status following the tenets of neurorehabilitation. (Kesser & Liddy 2017).

8 CONCLUSION

The purpose of this thesis was to describe how rehabilitation can be or has been of help when it comes to improving the quality of life in patients with PD. We also looked at how rehabilitation could be of help to patients in daily life and activity. Patients who suffer from PD-have both motor and non-motor symptoms, this affects their daily activity and function capability.

When PD is diagnosed by a physician, the three different stages of the disease are then expected to appear. Nursing interventions are provided depending on the stage of the sickness. One of the interventions provided for the patient is rehabilitation, which is focused on the most in this thesis. It was seen that nurses and other medical field professionals play a big role in ensuring that the right and needed rehabilitation processes for PD-patients are taken out and accordingly, to ensure a productive and good result from the care. (Pearson, Field & Jordan 2019.)

Rehabilitation as a support system, combined with pharmacological treatments helps PD-patients with regaining strength in their motor auction ability and in slowing the rapidly progressing symptoms that attack an individual's body. It also was discovered that exercise is used as a form of rehabilitation in all PD-patient's stages, since it helps in reducing pain that is caused by the stiffness of masalas. (Kessler & Liddy 2017.)

9 PERSONAL LEARNING PROCESS

Writing this thesis has been an eye opener academically and expanded understanding on the researched topic. The authors learned more about Parkinson disease and how rehabilitation is of help to Parkinson patients by slowing down the progress of the disease and also assisting in their mobility. We as well learnt how nursing intervention is important. It is important because nurses are equipped with skills that help patients medically, clinically, ethically and in other nursing fields. Nurses are also of help to patients in ways of coping in their daily life using evidence-based skills. Teamwork is the essential key to a successful career in nursing. The co-operation of nurses and other medical fields improves the care and guarantees even better results, especially in this researched topic since rehabilitation is included. Another learning point we developed while doing this research was the importance of communication. The authors of this thesis worked together to collect evidenced based data at the same time consulting each other with the aim of achieving study goals.

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Appendix 1

Authors	Journal and Year	Summary
Alzahrani, H. & Venneri, A.	Cognitive rehabilitation in Parkinson's disease. 2018	The articles describe how non-motor symptoms affects PD patients quality of life
Crowley, E.K., Nolan, Y.M. & Sullivan, A.M.	Exercise as therapy for Parkinson's? 2018	This article analyses the positive impacts of physical exercise on ageing patients with motor problems
Flaherty, E. & Bartels, S. J.	Journal of the American Geriatrics Society. 2019	Addressing the community-based geriatric healthcare workforce shortage by leveraging the potential of interprofessional teams.
Kessler, D. & Liddy, C.	Self-management support programs for persons with Parkinson's Disease. 2017	The study emphasizes on importance of self-managements combined with other therapies in improving quality of life
Pappa, K., Doty, T., Taff, S., Kneipmann, K. & Foster, E.	Self-management program participation and social	Rehabilitation therapy provides

	support in Parkinson's disease. 2017	several services and turns to be recommended to PD patients with non-motor paradigms. Outpatient rehabilitation therapy has constantly enhanced the quality of life of people
Schalling E., Johansson K. & Hartelius L.	Speech and communication changes are reported by people with Parkinson's disease. 2017	This highlights how speech rehabilitation therapy provides PD patients with speech ailments a chance of acquiring skilled treatment and hence healing.
Seung-Nam, K., Wang, X. & Park, H.J.	Integrative approach to Parkinson's disease. 2019	Physical rehabilitation therapy is a form of therapy that provides treatment for PD individuals undergoing pain and facing difficulties moving, living everyday life and functioning.

<p>Tosin, M.H.S., Campo, D.M., Andrade, L.T., Oliveira, B.G.R.B. & Santana, R. F.</p>	<p>Nursing interventions for rehabilitation in Parkinson's disease. 2016</p>	<p>In the rehabilitation context, the nurse, as a professional member of the multidisciplinary team, has an important role in health promotion, treatment of complications, and adaptation to the limitations imposed by the disease.</p>
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