

A Review of Multidisciplinary Rehabilitation Techniques for Patients Suffering from Parkinson's Disease

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Abstract

The aspect of interdisciplinary and multidisciplinary work has gained major impetus in the overall domain of healthcare. Multidisciplinary rehabilitation refers to the discussion of rehabilitation aspects by highly qualified specialists from various domains. This makes the team unique, as all aspects of rehabilitation can be effectively covered and this can help in generating better outcomes in this regard. Parkinson's disease is a major mental disability that can cause unnecessary movements among individuals and can cause pain as well. The use of multidisciplinary rehabilitation to ensure better treatment and rehabilitation of patients suffering from Parkinson's disease is one of the major areas that is being studied here. Besides, the study is also considering the generation of an understanding of the crucial concepts and dimensions of multidisciplinary working, using secondary qualitative data. The data has been collected from online databases and especially Google Search work, using the most appropriate keywords. Further, the use of only relevant and recent sources has been considered to ensure a better impact on the overall study. The study has effectively concluded the fact that the use of multidisciplinary rehabilitation can ensure better strategies, which are well-informed and can allow better management of Parkinson's disease. It can strengthen the approach that is taken about rehabilitation, which can be a clear area that can allow better treatment and can also facilitate better results of care. It can help in ensuring the desired impacts on the patients and ensure betterment in the long run.

Keywords: Multidisciplinary Rehabilitation, Parkinson's Disease, Patient Care

1. Introduction

Parkinson's disease is one major brain disorder that causes unintended and uncontrollable movements. These kinds of movements include shaking, stiffness and difficulty with balance and coordination. Rehabilitation of individuals suffering from Parkinson's disease can largely consist of multiple kinds of rehabilitation techniques, which can be employed. In this regard, as Handollet *et al.* (2021) suggest, the importance of rehabilitation lies in the fact that it can allow these individuals to ensure better treatment of the disease and gain greater control over their body movements. An individual can work with a therapist to ensure better results in this direction and can self-manage the rehabilitation program based on the severity of the illness and the needs of the individual. The use of techniques like outpatient rehabilitation, inpatient rehabilitation, occupational therapy services, speech-language pathology services, community reintegration and associated techniques can be impactful in generating betterment in this domain.

Effective use of these rehabilitation techniques can be beneficial in generating better outcomes when it comes to the management of patients suffering from Parkinson's disease. However, as per the ideas of Morrow *et al.* (2021), one specific intervention that is most likely to generate higher levels of success is to be facilitated based on the needs of the same. This means that the use of the correct rehabilitation technique in one area can be extremely beneficial. Now understanding the very nature of rehabilitation, it can be effectively highlighted that various areas can be associated with the overall domain of rehabilitation. Therefore, all these areas must be combined effectively to come up with a more appropriate and legitimate manner of working. This means that the use of the correct strategies in this regard, can be a beneficial area and this is where interdisciplinary working sets in.

Interdisciplinary working has been noted to be gaining major impetus in the current times and is one of the most beneficial areas in research as well. As Maniscalco *et al.* (2021) suggest, interdisciplinary working refers to the working of individuals of various disciplines, which together contribute to better treatment generation. This has been noticed to have gained greater acceptance in the overall domain of healthcare and policymaking. As mentioned earlier, multiple rehabilitation techniques can be employed in the case of Parkinson's disease and thus, the generation of an integrated technique can be even more beneficial and can generate the desired results as well. The use of the correct understanding of interdisciplinary working is a critical requirement, which can focus on the generation of better strategies for treatment and management of the rehabilitation process.

As these individuals belong to different domains and disciplines, each can provide valuable insights about their discipline and overlaps can be generated. These overlaps can be exploited to generate the best outcomes and ensure that the desired results are being generated (Seid *et al.* 2022). In this case, as well, the overall enhancement in the rehabilitation process and strategy can be generated if the use of the correct interdisciplinary teams, who inform strategy better is generated. The study here has focused on generating a better understanding of the way interdisciplinary rehabilitation techniques can benefit patients suffering from Parkinson's disease. An insight into the core areas of benefits and the challenges in the same has been considered as the key outcomes associated with the study that has been facilitated here. The study has further propounded effective strategies that can be employed for the generation of the best results in this direction.

2. Aims and objectives

Aim

The main aim of the study is to understand the impact that multidisciplinary rehabilitation techniques can have on patients suffering from Parkinson's disease

Objectives

- To understand the multidisciplinary working and its implications for patients suffering from Parkinson's disease
- To highlight the most effective issues that might be faced in using multidisciplinary rehabilitation techniques for patients suffering from Parkinson's disease
- To suggest effective strategies that can help in generating better multidisciplinary working for betterment in this direction

3. Research question

Primary question

1. What is the impact of multidisciplinary rehabilitation on patients suffering from Parkinson's disease?

Secondary question

2. What issues might be faced in using multidisciplinary rehabilitation techniques in the case of the disease?
3. What are the most beneficial strategies that can be employed to mitigate the issues that are being faced?

4. Methods and procedures

The conducting of study here has been done considering the overall area of secondary data and its appropriate collection. A list of keywords has been used to come up with appropriate search work across the most prominent databases that are available. These keywords are presented in the table below:

Table 1: Keywords used

Keyword	Relevance
Multidisciplinary rehabilitation	Has allowed a better understanding of the concepts and techniques
Parkinson's disease	Ensured a better understanding of the issues faced in the disease
Need for rehabilitation for Parkinson's disease	Highlighted the need for rehabilitation and the impacts that it can have on the treatment process
Impacts of Rehabilitation on patients suffering from Parkinson's Disease	Highlighted specific impacts of rehabilitation on patients suffering from Parkinson's disease
Effectiveness of multidisciplinary rehabilitation	Shows the importance of multidisciplinary working in the present times
Barriers to the implementation of Multidisciplinary rehabilitation	Pointed out the most effective issues that are faced in employing multidisciplinary working
Effective strategies for proper implementation of multidisciplinary rehabilitation	Best strategies that can ensure betterment in multidisciplinary rehabilitation usage

Using these keywords more than 30 journals have been collected and out of these journals, a further 10 journals were selected to conduct a comprehensive review. Besides, certain supporting journals have also been selected here to ensure a better understanding of the key areas and compare the data available for a critical comparative analysis technique. As only secondary qualitative data has been selected, which is the most widely available form of data in this case, the collection of factual and theoretical knowledge and the effective comparison of the knowledge that has been gained has been generated here. Further, the study has also made use of only relevant and recent sources of data, which has helped in attaining the highest levels of impact associated with the study. It has been beneficial in pointing out better data collection, which has informed the study here.

The sampling that has been employed in the case of the study is the stratified sampling technique, which has allowed better segregation of the required data. This is based on the overall requirements associated with the study and the various keywords that have been used have been segregated into categories to generate better outcomes. As Luis-Martínez *et al.* (2020) suggest, the use of stratified sampling allows a neat data collection based on the multifaceted needs of a study. It ensures that appropriate division of the subject into subgroups is generated, which can allow betterment by engendering the desired search work separately for each group. This can be a beneficial area altogether, which can have a massive impact on the conducting of the study and can allow better insights about each subgroup that is created out of the overall topic of the study.

Here, the division of the keywords has been considered based on the needs of the study and the subgroups that have been formed in the case of the study. Therefore, it has allowed the creation of a more comprehensive study, which is in line with the needs of the research and has allowed the best quality of data collection.

5. Findings and results

Multidisciplinary Rehabilitation and Parkinson's Disease

Multidisciplinary rehabilitation can be considered a critical area that can be considered in the case of Parkinson's disease. As per the ideas of Lidstone *et al.* (2020), multidisciplinary rehabilitation refers to the aspect of the involvement of experts from various disciplines in the generation of better practices. This is a major requirement in the current times and can impact the overall results that can be associated with the generation of proper rehabilitation practices. The involvement of experts from various disciplines that forms the ultimate part of the overall rehabilitation process can be seen as a critical area that can be beneficial. The expertise of all these individuals can be seen as a major benefit in understanding the best practices that can be applied. It can also help in generating betterment in terms of enhancement of the results that can be associated with the overall process of rehabilitation associated with any given domain (Radder *et al.* 2020). Thus, the use of multidisciplinary working in the overall rehabilitation process can be a beneficial requirement, for driving the best results overall.

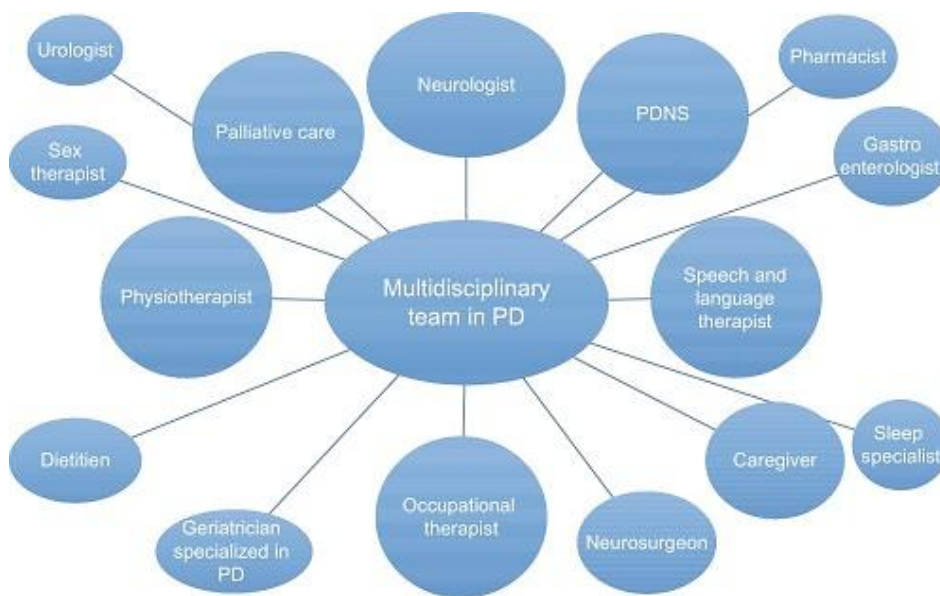


Figure 1: Multidisciplinary care in Parkinson's disease (Source: Radder *et al.* 2020)

Parkinson's disease is a common neurological disorder, which is being faced by individuals. In the words of Buono *et al.* (2021), the disease is a direct result of the loss of nerve cells from the part of the brain that is called the substantia nigra. Therefore, it is a brain disorder, which causes unnecessary and unwanted movements, which are unintended and uncontrollable. The shaking of body parts, stiffness and difficulty in balance and coordination are the direct consequences that can be associated with the disease and therefore, it is a brutal disease, which can cause considerable issues for any individual. Further, the symptoms associated with the disease are gradual, as they begin and develop into something worse with time. The main issue with the decrease in nerve cells in this region is the reduction in the levels of dopamine, which causes severe issues for an individual and can cause restrained movements and issues.

The severity of the disease can be understood from the fact that it results in vulnerabilities in the human body, which can result in serious infections and life-threatening problems. As Meloni *et al.* (2021) suggest, with the development of the disease, there is a high chance that an individual would not die directly, but would see a greater strain on the body. This can cause issues and chances of secondary infections, which can take the lives of these individuals. Therefore, this must be seen as a crucial disease and must be tackled appropriately at all costs. One major way of tackling this issue is by ensuring better rehabilitation. The use of appropriate rehabilitation techniques can benefit any individual suffering from the disease, as it is referred to as an adjuvant to the major

surgical and pharmacological treatments that are given in the case of Parkinson's disease (Chen *et al.* 2021). Appropriate rehabilitation can help in generating better gait and balance among patients and this can be an extremely beneficial area as well.

Therefore, the importance of appropriate rehabilitation programs in the case of Parkinson's disease is an extremely well-established fact. In the words of Nielsen *et al.* (2020), without appropriate rehabilitation, the impacts of treatments are also minimized, which can be seen as a major problem. In this regard, the generation of an appropriate rehabilitation program, which is goal-driven and appropriately scheduled can be an extremely beneficial area. The use of the same is a major requirement and in this case, the use of multidisciplinary working can be extremely beneficial. The application of multidisciplinary rehabilitation can be beneficial, as can help in the evolution of cutting-edge strategies, which can be an extremely impactful area. Rehabilitation consists of different professions, assessments and evaluations, which are brought together to ensure a better and holistic view of the patient's condition (Aye *et al.* 2020). Therefore, the use of multidisciplinary working can help in attaining the desired understanding and insights into critical areas that have been mentioned here.

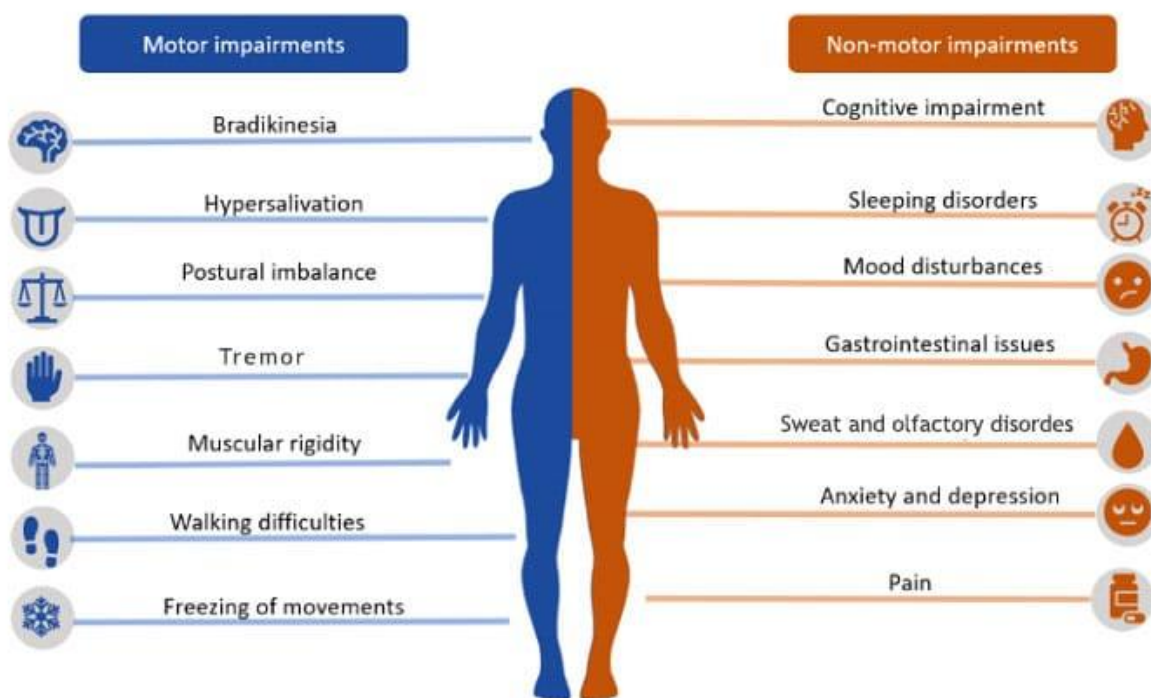


Figure 2: Rehabilitation in Parkinson's disease(Source: Aye *et al.* 2020)

The use of the appropriate rehabilitation techniques is largely dependent on the critical understanding of the patient's condition. Especially, in the case of Parkinson's disease, an understanding of the severity of the overall disease in an individual is largely important for coming up with an appropriate plan of rehabilitation (Cohen *et al.* 2021). The use of the correct understanding of the position of a patient is dependent on several individuals belonging to different fields like a group of specialists (consultant) physicians from different medical specialities, such as anaesthesiology, neurology, rheumatology, orthopaedics, psychiatry, orofacial specialists, geriatrics, neurosurgery, oncology, paediatrics, pharmacology, and rehabilitation medicine (Bouça-Machado *et al.* 2021). This means that the understanding of the critical areas is dependent on several individuals. This is where the idea of multidisciplinary rehabilitation sets in. The use of the same can be beneficial as it can help in generating betterment by engendering the desired outcomes of generating the best strategies.

Gaining a holistic view of the disease and the major areas associated with the condition of the patient is largely dependent on individuals from multiple domains. As per the ideas of Ferrazzoliet *al.* (2020), individuals

working in multiple domains can come together to point out the best strategies that are well-informed. These interventions and strategies can be employed for the rehabilitation purposes associated with any individual. Therefore, the use of multidisciplinary working, in this case, can be an extremely beneficial area and thus, Parkinson's disease can be managed using appropriate multidisciplinary working.

Issues in the use of multidisciplinary rehabilitation

The implementation of multidisciplinary rehabilitation techniques can be a beneficial area altogether. However, there is a major issue that can be faced in the case of the same, as conflicts in strategy creation might be seen. As Meng *et al.* (2022) suggest, in the case of multidisciplinary teams, the chances of conflicts are higher. This is large since with a rise in the number of opinions associated with one particular disease, the chances of contradiction also rise. This can be seen as an impactful area that can have an impact on the overall strategy-generation process. Furthermore, issues in coming to a consensus can be a critical issue again and this can pose severe threats towards multidisciplinary rehabilitation in the case of Parkinson's disease. Therefore, this is a major area that must be considered as a threat to the appropriate implementation of the same.

Another major area that must be considered in the case of multidisciplinary rehabilitation in the case of patients with Parkinson's disease is the aspect of time. The functioning of such teams is slow and therefore, as Scherbaum *et al.* (2020) suggest, the strategies that are the most suitable take time to form. This can lead to delays in the appropriate rehabilitation process, which can again have massive impacts on the overall results of the rehabilitation process. Besides, the involvement of individuals and experts from various domains and disciplines can be seen as a costly affair again. This can increase the cost associated with the rehabilitation process, which is again another major issue that can be faced. In such scenarios, appropriate research can inform better strategies and that can again be a time-consuming and costly affair as well (Rajan *et al.* 2020). However, if implemented appropriately, there is a high chance that a better rehabilitation process can be generated and this can be a beneficial area.

Strategies for betterment

In the case of rehabilitation research, the use of appropriate research work, which can be followed by individuals and teams is beneficial. It is essential for betterment in this regard, as Rafferty *et al.* (2021) suggest, that continuous research in the domain of rehabilitation is facilitated. This can be a beneficial area that can allow the business to generate betterment and this can also allow the best possible understanding of crucial aspects as well. The implementation of the most appropriate strategies and understanding of the same can be considered as a crucial factor and this can be informed by making adequate use of research that can be beneficial in the long run. Besides, research can help in coming up with breakthroughs concerning better strategies of rehabilitation that are informed by multidisciplinary teams.

Another crucial requirement is the funding of such research, which can allow better accessibility of multidisciplinary teams. In this regard, government support must be considered and this can help in generating better results as well. As per the views of Scherbaum *et al.* (2020), ensuring greater government support associated with research can allow smooth funding, which can benefit the purpose of the research. Furthermore, appropriately involving all stakeholders is another strategy and establishing the right form of communication with all the stakeholders, is another area of need as well. therefore, these strategies can help in fostering betterment and they can also help in attaining better outcomes when it comes to the establishment of better multidisciplinary rehabilitation processes associated with Parkinson's disease. It can help in generating higher patient satisfaction levels and engender better results associated with the same.

6. Discussion

An appropriate understanding of the overall area of multidisciplinary rehabilitation has highlighted the fact that with the rise in multidisciplinary working, better outcomes can be engendered. As per the ideas of Rajan *et al.* (2020), one crucial area that can be understood in the case of a multidisciplinary rehabilitation process is the amalgamation of the ideas and knowledge of various disciplines. This allows the generation of the desired levels

of knowledge, which can be deemed to be an extremely essential area altogether. It can allow the best results and can help in facilitating better insights into the crucial issues that are associated with the overall rehabilitation process of Parkinson's disease. Furthermore, better strategies for rehabilitation can be fostered and facilitated, which is another beneficial area that can help in generating better outcomes overall. The main area of need, as per the ideas of Ferrazzoliet *al.* (2020), in the case of rehabilitation the case of Parkinson's disease is an understanding of the needs of individual patients and framing strategies based on the same. For this, the use of multidisciplinary teamwork can be beneficial. It can help in generating greater insights and can promote the best possible practices in the long run.

Parkinson's disease can have massive impacts on the wellbeing of an individual and this can lead to issues that might be life-threatening in the long run. As per the views of Nielsen *et al.* (2020), direct threats to life is not a scenario in the case of Parkinson's disease, but they can lead to associated health issues and vulnerabilities, which can cause life-threatening scenarios. Thus, appropriate treatment of the disease and rehabilitation of the same can be another major area that can have positive implications. Further, there is a need to understand that with the correct implementation of rehabilitation techniques, post-treatment issues can also be largely diminished. The management of the disease can be seen as a critical requirement for engendering better outcomes. Nevertheless, the use of the correct outcomes can be a major requirement here and thus, the application of correct strategies is essential. As per Buono *et al.* (2021), the application of multidisciplinary rehabilitation techniques can be beneficial as it can help in gaining better views about the issues. Better techniques can also be generated, as insights about the most suitable interventions can be facilitated as well.

Therefore, the use of multidisciplinary rehabilitation techniques for patients can be a major area that can help in generating better results in the case of Parkinson's disease. The disease is one of the most common diseases and comes with major variations (Cohen *et al.* 2021). In this regard, constant research can also be a beneficial area that can foster betterment in this case as well. Thus, it becomes essential to generate a better understanding of critical aspects, which can be appropriately generated using multidisciplinary teams and appropriate team working as well. It can facilitate overall betterment in this regard.

7. Conclusion

Parkinson's disease has become a common disease that is generally leading to issues with brain functioning associated with any individual. The treatment of the disease must be supported with appropriate rehabilitation and therefore, framing the correct strategies of rehabilitation is a major need. In this regard, the use of the multidisciplinary team working pattern to ensure a proper rehabilitation strategy that can be followed in the case of Parkinson's disease can be effective. It can help in gaining better and more valuable insights into the case of the strategies that can be employed. Furthermore, it can help in generating better outcomes about the appropriate management of the disease and can ensure betterment in the case of individual patients.

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