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Therapeutic Recreation: A Bibliometric Analysis with Vosviewer

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Abstract

Therapeutic recreation refers to recreation programs designed for individuals with disorders, special conditions, or disabilities who require temporary or permanent treatment. These programs encompass a wide range of sports, arts, and leisure activities, serving a variety of specific needs. Conducting a bibliometric analysis of these publications serves as a guide for professionals working in the field. In this research, the VOSviewer program was used for bibliometric analysis, and only publications in the Web of Science database index (core collection) were included. 767 results were obtained, and analyses were conducted for author, citation, journal, country, institution, keyword, and abstract. The results are presented as treemaps, bar charts, network links, and cloud visuals. The most preferred type of publication was research articles with 561 results. More studies were published in 2019 than in any other year. It was found that the most studies were conducted in the field of rehabilitation (529) and the least in the field of sports sciences (20). According to the citation analysis of the authors, the most cited author was determined to be Marcia Jean Carter with 24968 citations. The most cited countries were the United States (4,227 citations), Canada (1,240 citations), and Australia (464 citations. For future studies, more contributions are expected not only from the rehabilitation discipline but also from other disciplines working in the field.

Keywords*:* Leisure, recreation therapy, recreational therapy, therapeutic recreation

Introduction

In today's technological world, access to information is easy, but it is necessary to be careful and selective when choosing sources to avoid confusion. A similar situation arises when trying to utilize scientific research. While accessing a wealth of scientific research can sometimes be beneficial for researchers, it can also lead to wasted time trying to filter through it. This is where bibliometric analysis comes in, categorizing and summarizing scientific studies to make them more understandable (Dereli, 2024).

Vosviewer is a program designed to create bibliometric maps and display them in full detail. Designed by Van Eck and Waltman, this program also presents bibliometric maps with detailed and effective graphics. Vosviewer can display maps effectively. Maps can highlight selected aspects, and have functions such as zooming and scrolling (Van Eck & Waltman, 2010)

With VOSviewer, a comprehensive analysis can be performed regarding the overview of the study title, important authors in the field, publications, citations, and the future outlook of the study title (Kumar et al., 2024). This method is frequently preferred by researchers because it allows them to summarize such a wide range of data and divide it into subject headings.

The concept of recreation covers all kinds of activities that can be carried out in open or closed areas for the purposes of traveling, resting, being together, moving away and getting excited in their free time. In addition, these activities can be planned actively or passively, in nature or in urban life, or even at home (Karaküçük, 2014). Recreation, is closely interconnected with many different sectors. It must also be

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accessible to people of all ages and socioeconomic levels. When recreation is associated with individuals with impairments, disabilities and/or individuals receiving treatment in hospitals and other health institutions, the concept of therapeutic recreation emerges (Carter & Van Andel, 2019). Some researchers may choose to use the title of recreation therapy for the same concept (Genoe et al., 2021; Tütüncü, 2012). However, from a different perspective, it can be interpreted that while therapeutic recreation refers to the field itself, recreation therapy refers to the practices in the field (Carter & Van Andel, 2019).

Therapeutic recreation practices are effective in areas such as meeting the social needs of individuals with special needs and ensuring their integration into society, while also supporting the healing processes of individuals (Kaya & Yıldırım, 2024).

Therapeutic recreation encompasses practices that can be carried out in a wide variety of environments, sometimes using adapted materials, sometimes involving animals, and sometimes including technology-based practices (Blidchenko, 2025; Crazidee, 2019; Özkul, 2014) .

It should also be noted that the healing and integrative effects offered by nature are frequently utilized (Freudenberg & Arlinghaus, 2009).

In a systematic review conducted by Picton et al. (2020), individuals with mental illnesses were able to have a positive impact on their mental health through nature-based therapeutic recreation practices. As in this example, allowing individuals to engage in activities they enjoy can have positive effects on at least one of the affective, psychomotor, or cognitive domains, depending on the type of activity. In this context, it is important to create and deliver therapeutic recreation practices tailored to individuals' interests and needs.

Therapeutic recreation, which is closely related to areas such as rehabilitation, nursing and hospitalization, is an important supporter in the process of individuals regaining their health. In a study of 49 hospitalized children, no differences were found in daily steps taken, physical distress, cooperation or interaction with healthcare personnel or caregivers in children receiving therapeutic recreation, while improvements in positive affect and a reduction in mood disturbance were found, and better sleep quality was found, and individuals were more well pleased with the leisure activities provided in the hospital (Hoag et al., 2022).

According to data from the World Health Organization, there are 1.3 billion individuals with disabilities worldwide (WHO, 2025) This number is projected to increase with the increasing aging population. Every individual living on Earth is a potential candidate for disability. In this context, every step taken to ensure the integration of individuals with disabilities into society is of critical importance. Therapeutic recreation can include activities for individuals in many disability groups. Cerebral palsy, one of the most common types of disability, is a status in which significant improvements can be achieved by providing the right education at an early age (Mantilla et al., 2024).

In a study investigating the effects of hippotherapy on the rehabilitation of children with cerebral palsy, the study group received 10 weeks of hippotherapy sessions in addition to physiotherapy sessions. The hippotherapy group demonstrated statistically significantly higher improvement rates in weltering, crawling standing, and GMFM-88 (Gross Motor Function Measure-88) total scores compared to the control group. Walking speed and cadence showed statistically significant improvements in the hippotherapy group, but no statistically significant improvement was observed in the control group's walking parameters. These results demonstrate that hippotherapy contributes to motor gains in children with cerebral palsy (Şık et al., 2012). These results also support the increased inclusion of horses and other animals in therapeutic recreation practices. In addition to motor development, there are also benefits such as reducing stress levels, promoting positive emotions, and providing relaxation (Sevinç & Gökmen, 2025). These emotional and social benefits that can be gained from these practices should not be forgotten.

The field of therapeutic recreation is a very comprehensive field, encompassing the adaptation of all types of recreational practices to meet specific needs. Despite the breadth of the field and its importance in human life, scientific studies investigating these practices and their effects are limited. The purpose

of this study is to provide information about the field through parameters such as identifying the dominant countries and authors in the field of therapeutic recreation, conducting citation analyses, determining the distribution by discipline, and determining publication types and density. Providing a comprehensive overview of previous studies can be effective in guiding future research.

Methods

This research used content indexed in the Web of Science (WoS) core collection (SSCI, SCI-E, AHCI & ESCI) database. The search, conducted on April 10, 2025, using the keyword "therapeutic recreation" and selecting "all fields," yielded 767 results. VOSviewer version 1.6.20 was used to visualize and scientifically map the data obtained. Author-citation-journal-country-institution-keyword and abstract analyses were presented using the bibliometric analysis method. Only data from the WoS core collection database was evaluated in the bibliometric analysis process, and other databases were not included in the study. The research results obtained from the WoS database were presented as treemaps and bar charts, while those obtained from VOSviewer were presented as network links and cloud visuals.

Results

Publications were published between 1980 and 2025, with 561 research articles (Figure 1), 65 book reviews, 50 editorials, 31 review articles, 28 scientific papers, 24 meeting abstracts, 4 book chapters, 4 early view articles, 4 meeting notes, 3 letters, and one edited note, one TV and radio compilation. When examining the distribution by year, the highest publication density occurred in 2019 and 2016.In the distribution by disciplines, the density was seen in the fields of Rehabilitation (529), Hospitality-Leisure-Sports-Tourism (44), Sociology (38), Nursing (30), Psychiatry (28), Clinical Neurology (22), Education and Educational Research (21) and Sports Sciences (20) (Figure 2).

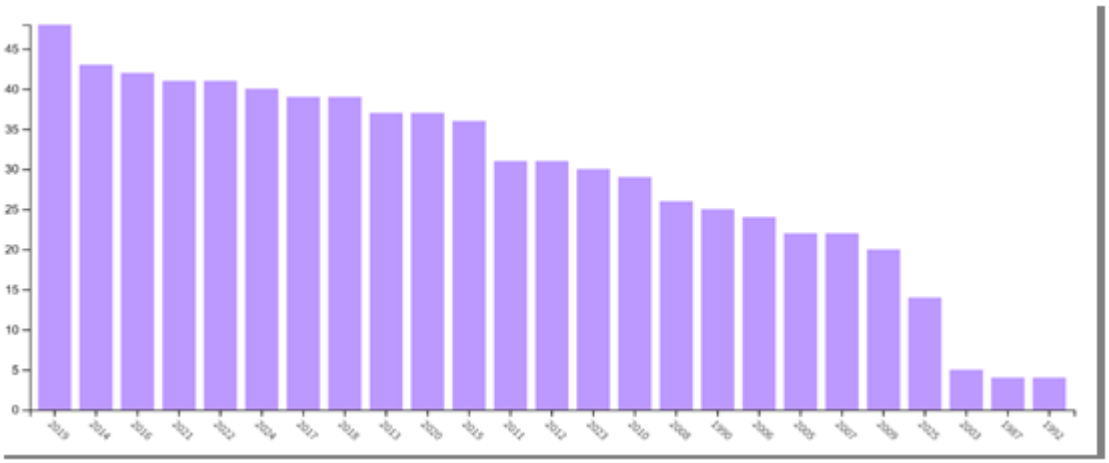

Figure 1. Distribution of publications on therapeutic recreation by year

Figure 2. Distribution of publications on therapeutic recreation by discipline

Bibliometric anlalysis of the co-authorship

A network map was created by determining the criteria of at least one publication and at least one citation to identify the most connected and collaborative authors based on the authors' co-authorship analysis. The analysis of the most closely connected names revealed 391 names clustered in 29 clusters, with 1043 links and a total link strength of 1491 (Figure 3).

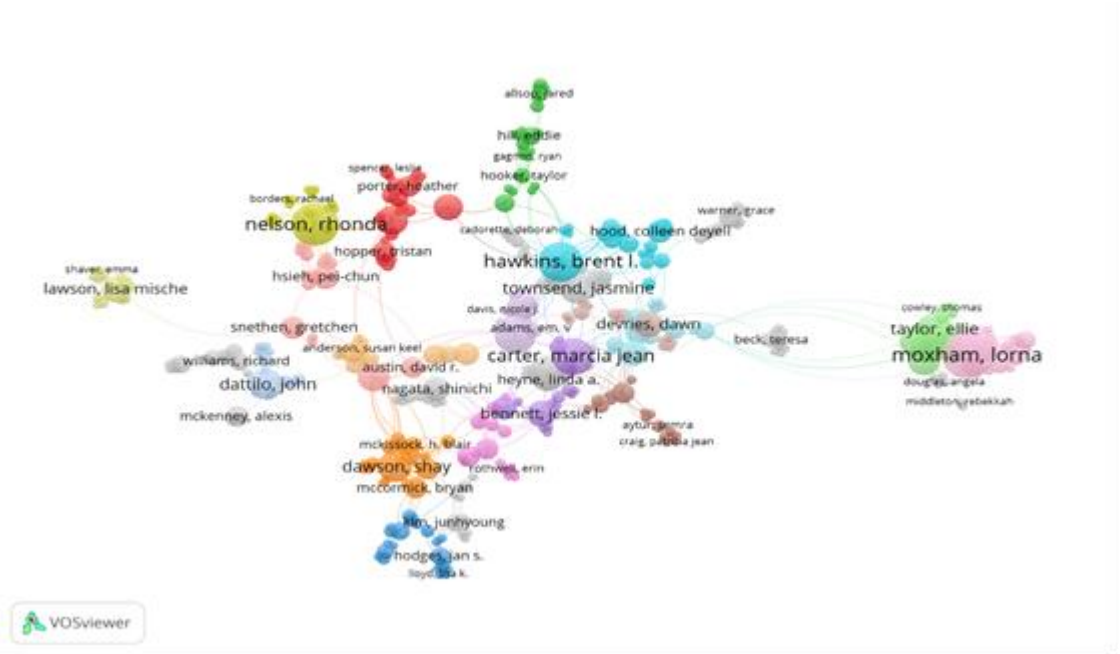

Figure 3. Co-author links showing collaboration between authors

Bibliometric analysis of citations of authors

To identify citation networks, a network map was generated for author citation analysis using the criteria of at least one publication and at least one citation. The analysis, conducted on 903 interconnected units, identified a total of 23 clusters, 8514 links, and a total link strength of 13392. The most cited authors were Marcia Jean Carter with 24968 citations, Lorna Moxham with 256 citations, and Yoshitaka Iwasaki with 240 citations (Figure 4).

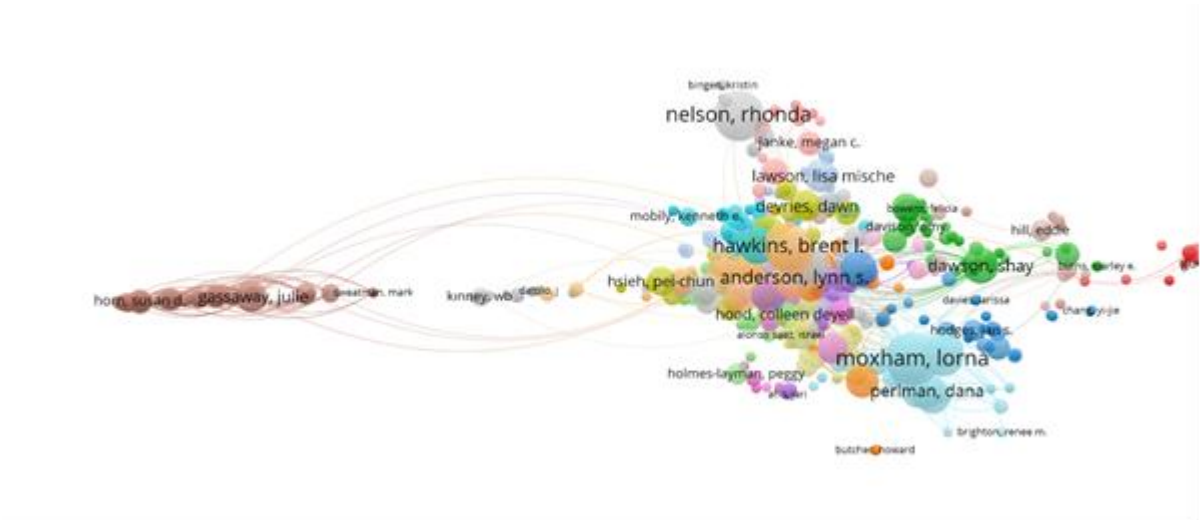

Figure 4. Citation Links of Authors

Bibliometric analysis of citations of countries

To create a network map of publication citations based on the country of origin, an analysis was conducted using 25 interconnected observation units, based on the criteria that a country must have published at least one work and receive one citation. Thirteen clusters, 62 links, and a total link strength of 871 were identified. The most cited countries were the United States (4,227 citations), Canada (1,240 citations), and Australia (464 citations). These countries also ranked in the top three in terms of total link strength and number of works (the United States 504, Canada 115, and Australia 46 publications) (Figure 5).

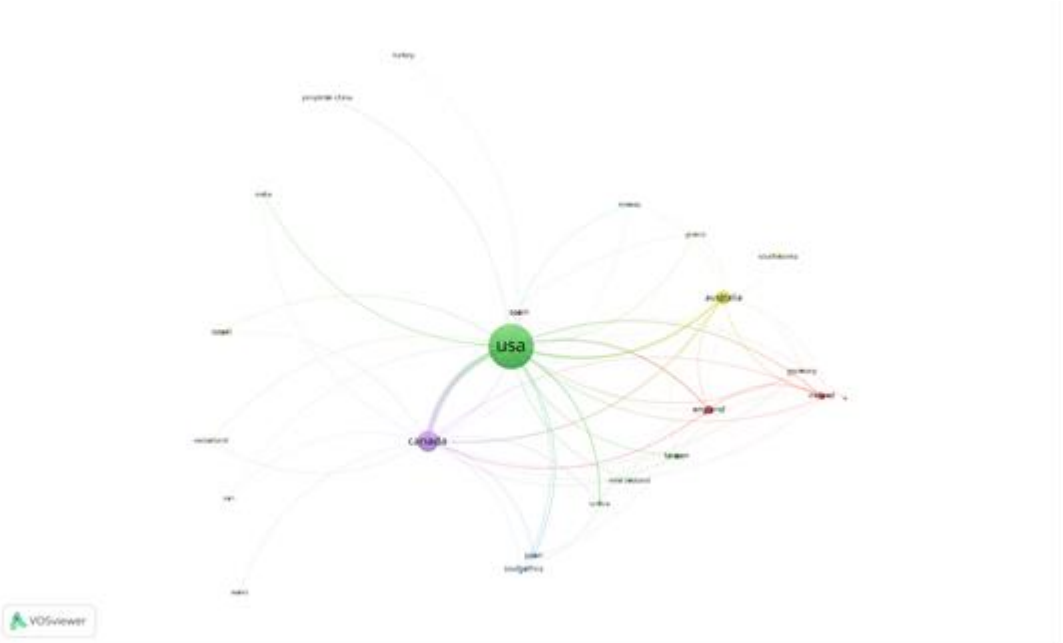

Figure 5. Citation Links of Countries

Bibliometric analysis of citations of institutions

To create a network map of inter-institutional citations, an analysis was conducted on 420 inter-related observation units based on the criteria that an institution must have published at least one work and received one citation. Temple University (56 study), Indiana University (39 study), and Clemson University (37 study) were the institutions producing the most studies, while the institutions with the most cited publications were Indiana University (471 citations), Clemson University (347 citations), and

the Institute for Clinical Outcomes Res (301 citations). A total of 21 clusters, 3337 links, and a total link strength of 6472 were identified (Figure 6).

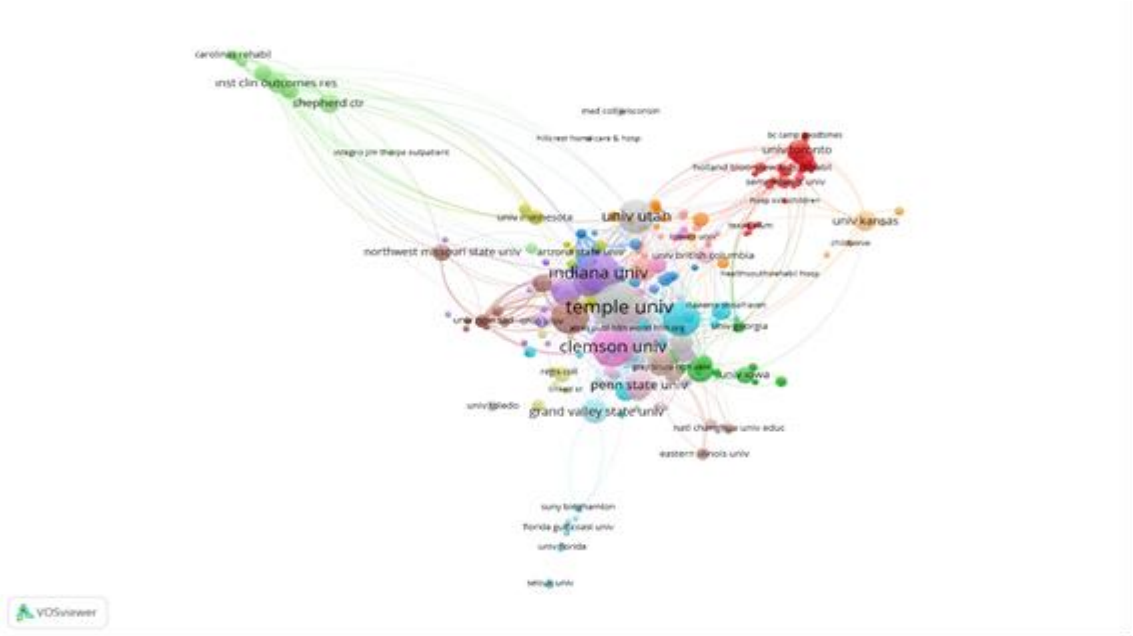

Figure 6. Citation Links of Institutions

Bibliometric analysis of co-occurrence of author keywords

The most frequently used keywords in publications related to therapeutic recreation were "therapeutic recreation" with 199 occurrences, "recreational therapy" with 99 occurrences, "leisure" with 34 occurrences, "recreation therapy" with 31 occurrences, and "mental health and physical activity" with 30 occurrences. The strongest terms in terms of total link strength were "therapeutic recreation," "recreational therapy," and "recreation therapy." Analysis of 974 related observation units yielded a total of 56 clusters, 4648 links, and 5404 total link strengths (Figure 7).

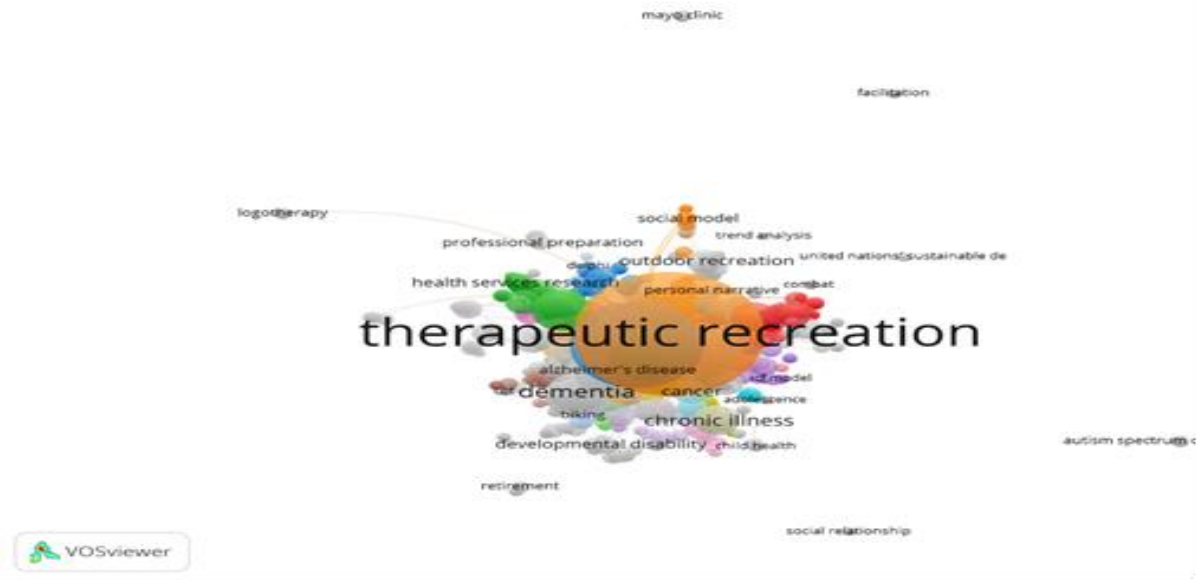

Figure 7. Links of co-occurrence of author keywords

Bibliographic coupling of documents

A bibliographic match refers to the citation of a common study cited by two independent sources. An analysis of 494 connected works, selected based on the criterion of having received at least one citation, yielded 14 clusters, 10,022 links, and a total connect strength of 17,438. The publications with the highest bibliographic matches were Carter (2014), with 24,947 citations, Barker & Dawson (1998), with 205 citations, and Eigenschenk et al. (2019) with 129 citations. The studies with the highest total connect strength were Wise (2018, 2021, 2020), Heyne & Anderson (2012), and Hood & Carruthers (2007) (Figure 8).

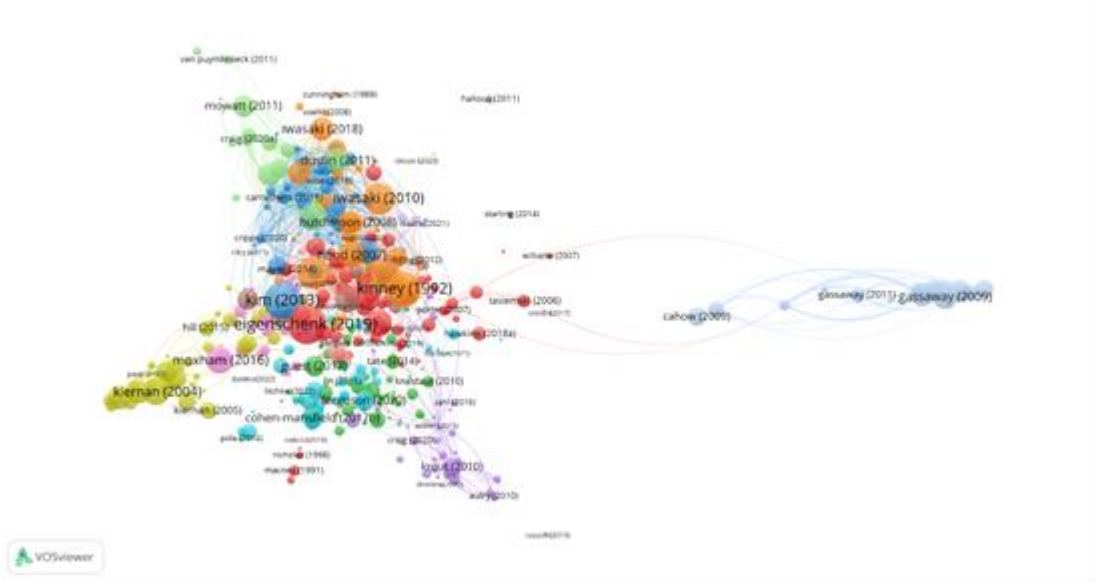

Figure 8. Bibliographic coupling of documents

Bibliographic coupling of authors

Based on the analysis of 977 linked entities selected based on the criteria of having published at least one study and received one citation, 39 clusters, 90,975 links, and a total connection strength of 240,369 were obtained. The authors with the highest bibliographic matches were Carter, Marcia Jean with 24,968 citations (3,658 connect strength), Moxham, Lorna with 256 citations (9,996 connect strength), and Iwasaki, Yoshitaka with 240 citations (5,048 connect strength) (Figure 9).

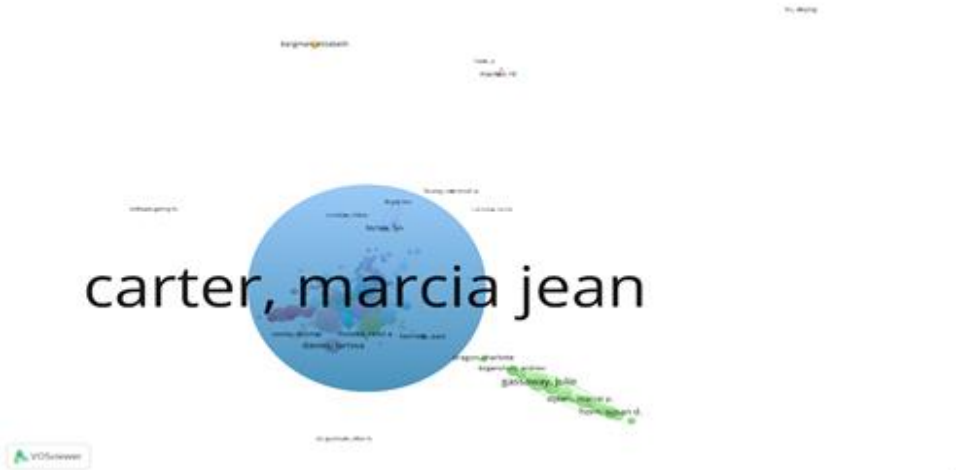

Figure 9. Bibliographic coupling of authors

Bibliometric analysis of co-citation of co-authors

Different sources cited in a publication are called co-citations. Based on the analysis conducted on 221 units with a minimum of 10 citations, a total of 8 clusters, 8770 links, and a total link strength of 38178 were identified. The most commonly co-cited authors were Stumbo, NJ (149), Iwasaki, Y (140), Sylvester, C (102), and Dattilo, J (100) (Figure 10).

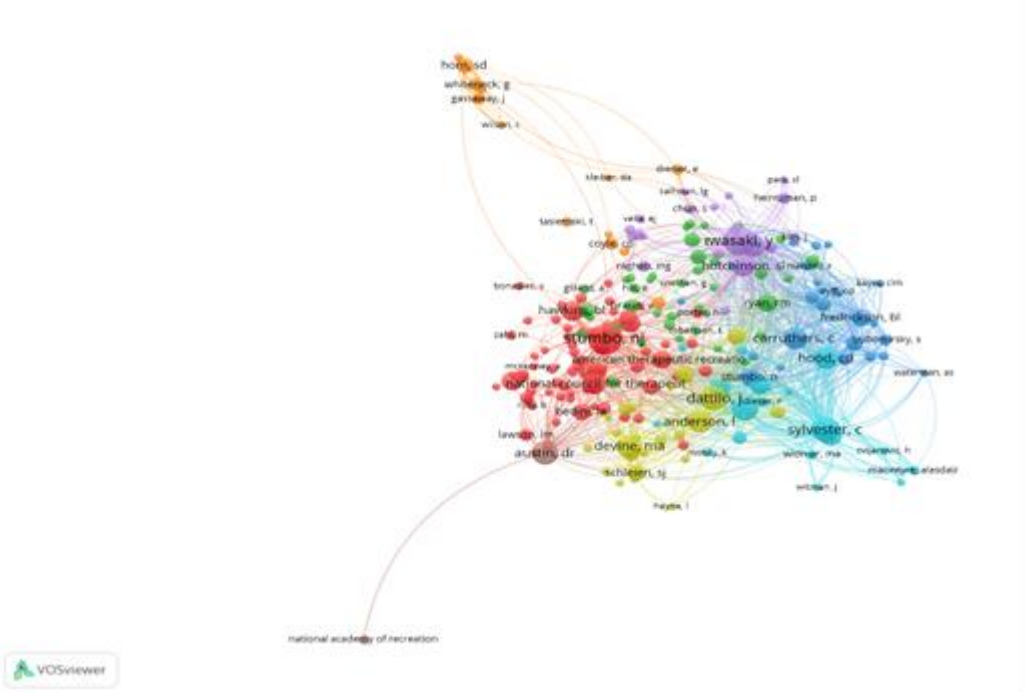

Figure 10. Co-Cited Author Links

Discussion

Current study included publications on therapeutic recreation indexed in WoS database. Although it is known that the development of the field dates back to recent years, the fact that only 561 research articles have been published since 1980 presents a very limited picture. While there are so many therapeutic recreation programs which can be implemented at home, outdoor, and indoor, and so many groups who has special needs, it can be said that more studies are needed to examine the effects of different therapeutic recreation practices on different disabled groups.

When the distribution of interdisciplinary publications is examined, it is noteworthy that rehabilitation is in the first place (529 publication) and sports sciences is in the last place (20 publication). The reason why publications are mostly in the field of rehabilitation may be that therapeutic recreation practices are more actively used in short-term treatment/recovery processes rather than as routine practices that individuals in need incorporate into their daily programs. This situation may be moving therapeutic recreation away from sports science and closer to the field of rehabilitation. Although a significant number of sports sciences faculties around the world have recreation departments, it is thought-provoking that there are so few publications from sports sciences in the field of therapeutic recreation. Moreover, therapeutic recreation encompasses a wide range of options, including basic exercises such as walking and cycling, nature sports, water sports, many branches which can be practiced in indoor sports halls, and equestrian sports. Therefore, both academics in sports science faculties and graduates of recreation departments should develop projects and apply therapeutic recreation programmes to address this gap, and the results of these programmes should be scientifically researched.

According to citation analysis results, the USA ranks first by a large margin. A study that conducted a bibliometric analysis using the Scopus database on the same topic also found the United States to be the most productive country (Kül & Parlakyıldız, 2024). USA has been continuing its investments for

disabled individuals for years. For instance, the organization Move United has been working to increase access to sports and recreational activities for individuals with disabilities since 1956. This organization, which spans 45 states, reaches more than 125,000 individuals each year, helping them move, increase their social interactions, and integrate into society (United, 2025). These systematic programmes, along with the programs run by universities, certainly increase the access of a large portion of society to recreational activities. Thus, a wide area is created for academic studies.

In the studies conducted, the use of 'therapeutic recreation' is more common, followed by 'recreational therapy', 'leisure' and ‘recreation therapy’ uses. The fact that researchers choose different words for the same concept can create confusion for readers. Although it may seem difficult for researchers to agree on a common usage, conferences and congresses can be organized on this subject to try to clarify the similarities and differences of the concepts.

According to the results of previous scientific research, it can be said that therapeutic recreation programs generally provide positive contributions to individuals in many areas. For example, in the study conducted by Zabrinskie et al. (2005), disabled participants completed alpine skiing or horseback riding programs and the effects of these programs on quality of life and athletic identity were investigated. As a result, while there are controversial results regarding athletic identity; participation in these programs positively affected general health, quality of life, family life and social life. A systematic review examined the effect of outdoor therapeutic recreation on suicidal tendencies. No significant difference was found in suicidal tendencies between individuals who participated in therapeutic recreation programs and those who did not. Nevertheless, depression rates were lower among those participating in therapeutic recreation (Yousiph et al., 2025).

Kiernan et al. (2004) investigated the impacts of participation in a therapeutic recreation camp for children from 15 different European countries. While the camp did not offer significant improvements in children's overall functionality, benefits were found in areas such as physical symptoms, quality of life, and physiological hyperarousal.

More programs should be developed and more scientific research conducted in the field of therapeutic recreation. Offering programs that include a wider variety of activities to a wider range of disability groups should also be considered as a way to help individuals with disabilities find activities they enjoy and can engage in without getting bored. The availability and accessibility of such activities can mean that individuals will continue participating not only during the program but throughout their lives. This will be a significant step toward achieving one of the primary goals of therapeutic recreation: integrating individuals into society and leading more social lives. In addition, more evidence obtained through scientific studies can encourage schools, hospitals, municipalities and all relevant institutions to increase these activities for individuals with special needs.

Conclusion

As a result of this study, it was determined that research articles were the most preferred type of publication. The majority of the studies were conducted in the field of rehabilitation sciences, whereas the least number of studies were carried out in the field of sports sciences. Additionally, citation analysis revealed that the United States was the most cited country.

In light of the results of current study, the most contributing countries, authors, and institutions should be carefully examined. When planning future research, both these factors and areas understudied in the literature should be considered. Given the multidisciplinary nature of therapeutic recreation, researchers from different fields may consider collaboration. This study can help reveal the potential in the field and serve as a guide for future research.

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Author Contributions

Conceptualization: MKK, SK. Methodology: MKK, SK. Investigation: MKK, SK. Data Curation: MKK, SK. Formal Analysis: MKK, SK. Writing – Original Draft: MKK, SK. Writing – Review & Editing: MKK, SK.

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Conflict of Interest

The authors declare that they have no conflicts of interest.

Ethics Statement

As this study is based solely on the bibliometric analysis of publications indexed in the Web of Science database, it does not involve any data collection from human or animal participants. Therefore, ethical approval was not required for this research.

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