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Book Review

BIOMECHANICAL ANALYSIS AND PHYSIOTHERAPEUTIC OUTCOME OF SELECTED EXERCISES USING THE SCHROTH AND PILATES METHODS IN ADOLESCENT IDIOPATHIC SCOLIOSIS

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ABSTRACT

The review of the monographic book "Biomechanical study and physiotherapeutic evaluation of specific exercises using Schroth and Pilates techniques in adolescents with adolescent idiopathic scoliosis" by Kushtrim Zhjeqi, Dr. Cand., is a comprehensive investigation into the impact of the combination of Schroth and Pilates exercises on the well-being of adolescents with mild idiopathic scoliosis. The study evaluates the impact of these exercises on Cobb angle, trunk rotation angle (ATR), chest expansion, flexibility (trunk flexion), and quality of life (QoL) in this particular group of individuals. The monographic book written by Prof. Ass. Dr. Shkurte Rreca-Mala provides a comprehensive analysis of the biomechanical elements of certain exercises and their impact on physiotherapeutic outcomes for young people with idiopathic scoliosis. The language and presentation of the book are clear and concise, making complex topics easy to understand. The author integrates theoretical knowledge with practical knowledge, clarifying the basic mechanics and physiological reactions associated with Schroth and Pilates exercises. The study included 69 adolescents with idiopathic scoliosis aged 10–17 who underwent a therapy programme including Schroth and Pilates exercises for 6 months. Participants engaged in daily 60-minute sessions, two cycles of 2-week treatment regimens, followed by a 10-week home treatment program. The study assessed treatment efficacy using various measures, including Cobb angle, ATR, chest expansion, trunk flexion, and quality of life assessment. The results showed significant improvements in all parameters evaluated for both groups of patients, including those who wore corsets and those who did not. Reductions in Cobb angle and trunk rotation angle were significant for both groups, and both groups showed gains in chest extension and trunk flexion. The study findings are consistent with previous research demonstrating the beneficial effect of Schroth procedures on scoliosis wellness. However, he also acknowledges the study's limitations, such as the lack of a control group and the need for extended follow-up periods. The study recommends conducting controlled experiments with extended research durations, taking into account skeletal maturity, to obtain more accurate data regarding the effectiveness of combined Schroth and Pilates exercises.

Despite these limitations, the study's findings have made significant advances in the treatment of adolescent scoliosis and yielded favourable outcomes.

BOOK REVIEW

Author: Ass. Dr. Sci. Shkurte Rrecaj-Mala

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The monograph "Biomechanical analysis and physiotherapeutic outcome of selected exercises using the Schroth and Pilates methods in adolescent idiopathic scoliosis" is a comprehensive study that aims to find out how the combination of Schroth and Pilates exercises affects various aspects of the health of adolescents with scoliosis mild idiopathic. The study focused on evaluating the effect of these exercises on Cobb angle, trunk rotation angle (ATR), chest expansion, flexibility (trunk flexion) and quality of life (QoL) in this specific population.

This monograph is a comprehensive and meticulously researched work that delves into the effectiveness of the Schroth and Pilates methods in the management of adolescent scoliosis. The book begins with a thorough introduction to the topic, providing readers with a solid foundation of understanding regarding the nature of adolescent idiopathic scoliosis. The author then goes into a detailed examination of the Schroth and Pilates methods, showcasing their unique characteristics, principles, and benefits for scoliotic patients.

Authorized by Prof. ass. Dr. Shkurte Rreca -Mala, this monograph presents an in-depth analysis of the biomechanical aspects of selected exercises, as well as their impact on the physiotherapeutic outcome in cases of idiopathic scoliosis in young people. The author's expertise in this field is evident through the extensive research that supports the various discussions and findings described in the book. Overall, this research is a very valuable resource for both researchers and practitioners in the field of physiotherapy. The monograph provides a comprehensive examination of Schroth and Pilates exercises in the management of adolescent idiopathic scoliosis, supported by sound scientific evidence and coupled with practice. With its comprehensive approach, this book contributes significantly to the understanding and treatment of scoliosis, ultimately improving the quality of life for affected individuals.

The book's language and presentation are clear and concise, allowing for easy understanding of complex concepts. The author effectively uses illustrations, diagrams and case studies to enhance readers' understanding and facilitate practical application.

Throughout the monograph, the author skillfully combines theoretical knowledge with practical knowledge. The inclusion of biomechanical analysis is a prominent feature of this book, shedding light on the underlying mechanisms and physiological responses associated with Schroth and Pilates exercises. This integration of theory and practice empowers readers to understand the rationale behind these exercises and their potential impact on patients. The study included sixty-nine adolescents aged 10-17 years, all of whom had idiopathic scoliosis with a Cobb angle ranging from 10º-45º. The treatment protocol consisted of exercises selected from the Schroth and Pilates methods, which were performed over a period of 6 months. Exercises were performed for 60 minutes per day, with two periods of 2-week treatment regimens followed by a 10-week home treatment program.

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To evaluate the effectiveness of the treatment, several measurements were taken at three time points: before treatment, 12 weeks and 24 weeks. These measurements included Cobb angle determined by X-ray, ATR measured using a scoliometer, chest expansion in centimeters, trunk flexion measured the distance between C7 to S2 with a cantimetric tape, and QoL assessed using the Scoliosis Research Society Questionnaire. SRS-22r.

The results of the study showed significant improvements ($P<0.05$) in both groups of patients, those wearing and not wearing corsets, in all evaluated parameters. The Cobb angle showed a decrease from 21.97±4.99° to 18.11±6.39° in the corset group and from 14.19±3.11° to 11.66±2.73° in the group corsets are not used. Similarly, trunk rotation angle decreased from 7.19±1.36° to 5.36±1.66° in the corset group and from 4.72±1.04° to 3.58±0 .94° in the group that did not wear a corset. Chest extension and trunk flexion also demonstrated improvements for both groups. The findings of this study suggest that the combination of Schroth and Pilates exercises can lead to significant improvements in Cobb angle, trunk rotation angle, chest expansion, and trunk flexion in adolescents with idiopathic scoliosis. These improvements are important as they can potentially contribute to the management and treatment of scoliosis, affecting the overall quality of life of patients.

Overall, this monograph provides valuable insights into the effectiveness of Schroth and Pilates exercises in the treatment of adolescent idiopathic scoliosis. The rigorous methodology of the study, including the use of different measurement tools and assessments at different points in time, adds to the reliability of the results. However, further research and studies with larger sample sizes are recommended to validate these findings and increase their generalizability.

COMMENTS THAT SUPPORT ARGUMENTS

1. The study revealed that the combination of Schroth and Pilates exercises was statistically a very determining factor in reducing the Cobb angle and trunk rotation angle, improving chest expansion and trunk flexion.
2. The results of the study were similar to other studies that have reported a positive impact of Schroth methods on the quality of life of patients with coliosis.
3. The study acknowledges the limitations of not having a control group and the need for longer follow-up periods to assess exact effectiveness.
4. The study encourages to carry out controlled studies with longer periods of research taking into account the skeletal maturity (Risser scale), in order to obtain more accurate results regarding the efficiency of combined Schroth and Pilates exercises.

WEAKNESSES AND LIMITATIONS OF THE BOOK

Despite the positive results and contribution to the treatment of scoliosis in teenagers, this monograph has some weaknesses and limitations.

1. Lack of a control group: The study did not include a control group, which makes it difficult to determine the specific effects of the combined exercises. A control group would have a basis for comparison and would more accurately argue the impact of these combined exercises.
2. Short follow-up period: The study had a follow-up period of only 6 months. Scoliosis requires long-term treatment, a longer research period would have provided more comprehensive results on the long-term effects of combined exercises.
3. Lack of consideration for skeletal maturity: The study did not use the Risser scaled model to measure skeletal maturity, which is a key factor in the treatment of scoliosis.
4. Sample size and diversity: This research had a very small sample of patients with idiopathic scoliosis. This limits the results of the findings in a wider population of patients with scoliosis.
5. Potential bias: The study did not mention a verbatim or randomization procedure, which may bias the results. It is important to minimize bias in order to obtain reliable and careful findings.
6. Lack of comparison between Schroth and Pilates exercises: although the study combined Schroth and Pilates exercises, it did not compare the effects of the exercises individually. This makes it difficult to determine the specific contributions of each exercise pattern to outcomes.

Author's note

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