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## INTRODUCTION

Rapid changes in healthcare services and living conditions today are leading to significant changes in the demographic structures of societies. Chief among these changes are the ageing population and the increase in the number of individuals with special needs. The integration of geriatric individuals and individuals with special needs, who have been neglected for a long time, into social life has now become an important necessity (1).

Various environmental and social barriers stand in the way of geriatric individuals and individuals with special needs

participating in society. These barriers include inadequate psychosocial support, negative social attitudes, and limited access to services. Community-based rehabilitation is of great importance in overcoming such barriers and ensuring social cohesion (2).

Group-based interventions implemented within the scope of community-based rehabilitation aim to support individuals not only physically but also emotionally and cognitively. Thanks to this support, individuals' self-esteem increases, they become more willing to fulfil their social roles, and their connections to life are strengthened. Psychosocial rehabilitation practices developed in

## The effect of psychosocial and geriatric anatomy-based rehabilitation training on student attitudes

### Abstract

**Aim:** This study aims to determine the effects of applying psychosocial rehabilitation training using different methods on students' attitudes and behaviours towards geriatric and special needs individuals.

**Materials and Methods:** Second-year undergraduate physiotherapy students who voluntarily agreed to participate and signed an informed consent form were included in the study. Participants were randomly divided into three groups. The first group received psychosocial rehabilitation training combined with anatomy-based psychosocial rehabilitation practices focusing on the anatomical and physiological changes observed in older adults and individuals with; the second group received only theoretical psychosocial rehabilitation training; and the third group continued with the standard curriculum. Before and after the intervention, participants completed the Psychosocial Care Competence Self-Assessment Scale (PCCSAS), the Multidimensional Attitudes Toward Persons with Disabilities Scale (MAS), and Kogan's Attitudes Toward Older People Scale (KAOP). Data were analyzed using SPSS 22.0 software.

**Results:** There was no significant difference between the pre-test scores of the groups ( $p>0.05$ ). After the training, a significant increase was observed in both the first group, which received psychosocial rehabilitation + practical training, and the second group, which received only psychosocial rehabilitation training ( $p<0.05$ ). No significant change was observed in the third group. In the intergroup comparisons, the first and second groups were found to be significantly different from the control group; however, no significant difference was found between these two groups ( $p>0.05$ ).

**Conclusion:** Psychosocial rehabilitation training positively affects students' psychosocial care competencies and their attitudes towards geriatric and disabled individuals. Practical training appears to create stronger learning and awareness than theoretical training.

**Keywords:** Psychosocial support, rehabilitation, anatomy, aged, persons with disabilities, students

this direction play an important role in the integration of society and the formation of social awareness (3).

Psychosocial rehabilitation services and training are therefore critically important for societies. Training provided specifically to university students increases young people's awareness of geriatric and special needs individuals and positively influences their attitudes towards these groups. This contributes to the formation of a more inclusive social structure and the strengthening of social integration in the future (4).

These educational programmes not only provide individuals with scientific knowledge but also equip them with social awareness and ethical considerations. The involvement of young adults with these qualities in various levels of society will enable the formation of a more integrated and inclusive social structure in the future (5).

Therefore, psychosocial rehabilitation training must be systematically planned and implemented in different programmes with a multidisciplinary approach. Through these programmes, young individuals receiving training will develop an inclusive perspective towards disadvantaged groups; this will contribute to both improved service quality and more meaningful developments in social policies in the long term (6).

In recent years, anatomy-based educational approaches have attracted growing interest in health sciences training. In this context, anatomy-based education can be described as a structured teaching model that brings together anatomical and functional knowledge with clinical, rehabilitative, and psychosocial applications (7,8). Instead of presenting anatomy as a purely descriptive and isolated subject, this approach emphasizes the relationship between anatomical structures and functional outcomes, patient-centered care, and real-life rehabilitation settings. Previous educational studies indicate that anatomy-integrated and function-oriented teaching models can support the development of clinical reasoning skills, increase professional awareness, and improve student engagement (7,9). Nevertheless, anatomy-based frameworks have only been addressed in a limited number of studies within the specific context of psychosocial and geriatric rehabilitation training (9). This situation points to the need for structured educational models that combine psychosocial rehabilitation with anatomy-based functional understanding.

In addition to these points, although the importance of psychosocial rehabilitation has increased considerably in recent years, the number of studies examining how psychosocial rehabilitation training affects students' attitudes toward geriatric individuals and individuals with special needs remains quite limited. Existing research is predominantly clinically based, and therefore a clear gap exists in understanding the impact of such training on young adults. For this reason, the present study enables the evaluation of whether a psychosocial rehabilitation training programme improves students' attitudes toward geriatric individuals and individuals with special needs. We believe that

positive attitudinal and behavioural changes gained by young professionals during their university education may contribute to a more inclusive and higher-quality service in the future.

In light of this information, the study hypothesised that students who received psychosocial rehabilitation training would demonstrate significantly more positive attitudes and behaviours toward geriatric individuals and individuals with special needs than those who did not receive such training.

## MATERIALS AND METHODS

### Ethics

Ethical approval for the study was obtained from the Artvin Çoruh University Scientific Research and Publication Ethics Committee on 12 June 2025 (Approval No: E-18457941-050.99-181730). The study population consisted of students enrolled in the physiotherapy associate degree programme at Dicle University. All participants were informed about the study, and those who voluntarily agreed to participate provided written informed consent prior to inclusion.

### Participants

Prior to commencing the study, the G\*Power 3.1.9.4 (Düsseldorf, Germany) software was used to determine the required sample size. In the calculation, the effect size was set at  $f=0.25$ , the significance level at  $\alpha=0.05$ , and the statistical power at  $1-\beta=0.80$ . The analysis conducted for the three-group one-way ANOVA predicted that a total of 84 participants, 28 in each group, would be sufficient. To compensate for potential data losses (15%), it was planned to include 33 participants in each group, thus determining the total sample size as 99 (10).

### Inclusion criteria:

- Volunteering to participate in the study and signing the consent form
- Attending all planned training sessions during the research process without exception
- Not having previously received psychosocial rehabilitation training

### Exclusion criteria:

- Failure to sign the consent form
- Voluntarily withdrawing from the study
- Not attending more than 20% of the training sessions
- Having previously received training in psychosocial rehabilitation

### Method

Students who volunteered to participate in the study and signed the written consent form were included in the research. Participants were first asked to complete a five-question demographic

form containing basic information such as age and gender. Subsequently, the Community Psychosocial Care Competence Self-Assessment Scale (PCCSAS), the Multidimensional Attitude Scale Towards People with Disabilities (MAS), and Kogan’s Attitudes Toward Older People Scale (KAOP) were administered. After the pre-test evaluations of the scales were completed, participants were divided into three groups using a randomisation list generated by a computer-based random number generator. To ensure balance between groups, the randomisation process was conducted by an independent researcher. Furthermore, to prevent bias in the assessments, the administration and scoring of the scales were performed by a

researcher who was independent of the study team and blinded to group allocation.

Participants in the first group received a 10-week psychosocial rehabilitation training programme, along with a 5-week training module that included anatomy-based psychosocial rehabilitation practices focusing on recognising age or condition-related anatomical, physiological, and functional changes in older adults and individuals with disabilities. The second group participated only in the 10-week psychosocial rehabilitation training programme, while the third group received no training. The planning for the 10-week training programme was structured as follows (Table 1 and Table 2).

| Table 1. Content of the 10-week psychosocial rehabilitation training programme |                                                                                                                                                                                       |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week                                                                           | Training Content                                                                                                                                                                      |
| Week 1                                                                         | Introduction to psychosocial rehabilitation; definition, characteristics, and core components of psychosocial rehabilitation                                                          |
| Week 2                                                                         | Identification of geriatric individuals; anatomical and physiological changes related to ageing; WHO age classification; communication methods for older adults                       |
| Week 3                                                                         | Identification of individuals with special needs; anatomical deformities and structural differences; physiological changes; classification of special needs; communication approaches |
| Week 4                                                                         | Social discrimination, social attitudes, and prejudice toward disadvantaged groups                                                                                                    |
| Week 5                                                                         | Stress, anxiety, and other emotional difficulties; coping strategies and supportive approaches                                                                                        |
| Week 6                                                                         | Individual, family, and society dynamics; social support mechanisms and community resources                                                                                           |
| Week 7                                                                         | Social integration; difficulties in fulfilling social roles; strategies for enhancing participation and role performance                                                              |
| Week 8                                                                         | Rehabilitation perspectives; societal viewpoints toward rehabilitation; interdisciplinary approaches                                                                                  |
| Week 9                                                                         | Self-awareness in personal development; recognising emotional and cognitive processes.                                                                                                |
| Week 10                                                                        | Overall review of the programme; mutual experience sharing; evaluation of training outcomes                                                                                           |

| Table 2. Week anatomy-based psychosocial rehabilitation module (for Group 1) |                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Week                                                                         | Anatomy-Based Module Content                                                       |
| + Week A1                                                                    | Anatomical changes in ageing; musculoskeletal and neurological alterations         |
| + Week A2                                                                    | Functional decline and physiological mechanisms in older adults                    |
| + Week A3                                                                    | Anatomical/structural differences in individuals with disabilities                 |
| + Week A4                                                                    | Functional impairments: gait, posture, mobility, upper/lower extremity limitations |
| + Week A5                                                                    | Clinical reflections: anatomy-based communication and rehabilitation strategies    |

Evaluation Methods

**Demographic Information:** Socio-demographic data were collected through a structured questionnaire covering age, gender, household cohabitation with elderly or disabled individuals, and prior professional experience working with elderly populations or individuals with special needs.

**Psychosocial Care Competence Self-Assessment Scale (PCCSAS):** This is a measure designed to determine the competence of healthcare professionals and students in psychosocial care through self-assessment. The scale, which assesses individuals' social, ethical, and emotional states, consists of 18 items and is organised on a 5-point Likert scale. Scores on the scale range from 18 to 90. Higher scores on the PCCSAS

indicate greater perceived psychosocial care competence, while lower scores reflect insufficient or limited competence in this area. The scale was developed by Karataş and Kelleci in 2019 and the Turkish version validated by the same authors was used in this study (11).

**Multidimensional Attitude Scale Towards People with Disabilities (MAS):** Developed by Findler and colleagues in 2007 to measure attitudes towards people with disabilities. The scale consists of 31 items and is organised on a 5-point Likert scale. Scores ranging from 31 to 155 can be obtained on the scale. Higher MAS scores denote more positive, accepting, and supportive attitudes toward individuals with disabilities, whereas lower scores represent more negative, rejecting, or prejudicial attitudes. The Turkish validated version of the scale, adapted by Yelpaze and Türküm in 2018, was used in this study (12).

**Kogan's Attitudes Toward Older People Scale (KAOP):** Developed by Kogan in 1961 to assess individuals' attitudes and behaviours towards the elderly, it is a 6-point Likert-type scale. The scale consists of a total of 34 items, with a score range of 34–204. Higher scores on the KAOP reflect more positive, respectful, and age-inclusive attitudes, while lower scores indicate negative perceptions, ageism, and prejudicial attitudes toward older adults. The Turkish validity and reliability study of the scale was conducted by Erdemir and colleagues in 2011, was used in this study (13).

## Statistical Analysis

IBM SPSS Statistics 25.0 software was used for the statistical analysis of the data obtained from the study. The demographic characteristics of the participants were summarised using descriptive statistics (mean, standard deviation, percentage, and frequency). To examine the initial differences between groups, the chi-square test (categorical variables) and one-way ANOVA (continuous variables) were applied.

Mixed-design ANOVA (Group  $\times$  Time interaction) was used to examine changes in pre-test and post-test scores obtained from the scales. Where necessary, pre-test scores were included in the model as covariates and ANCOVA was performed. Within the framework of assumptions, normality was assessed using the Shapiro–Wilk test, variance homogeneity using the Levene test, and variance-covariance homogeneity using Box's M test. In case of violation, appropriate transformations or non-parametric alternative tests were applied.

Bonferroni correction was applied for multiple comparisons, and statistical significance was set at  $p < 0.05$ . Additionally, partial eta squared ( $\eta^2p$ ) and/or Cohen's d values were reported for effect sizes.

## RESULTS

Analysis of the demographic data of the participants in our study revealed no significant differences between the groups for all variables ( $p > 0.05$ ) (Table 3).

**Table 3. Demographic characteristics of participants by group**

| Variable                                              | Group 1 (n=32) | Group 2 (n=34) | Group 3 (n=33) | p-value |
|-------------------------------------------------------|----------------|----------------|----------------|---------|
| Age, mean                                             | 20 [19–21]     | 20 [19–21]     | 20 [19–21]     | .912    |
| Gender, n (%)                                         |                |                |                |         |
| Female                                                | 18 (56.2)      | 20 (58.8)      | 19 (57.6)      | .947    |
| Male                                                  | 14 (43.8)      | 14 (41.2)      | 14 (42.4)      |         |
| Elderly/disabled person living at home, n (%)         |                |                |                |         |
| Present                                               | 10 (31.2)      | 11 (32.4)      | 12 (36.4)      | .873    |
| No                                                    | 22 (68.8)      | 23 (67.6)      | 21 (63.6)      |         |
| Experience with elderly individuals, n (%)            |                |                |                |         |
| Present                                               | 5 (15.6)       | 6 (17.6)       | 5 (15.2)       | .912    |
| No                                                    | 27 (84.4)      | 28 (82.4)      | 28 (84.8)      |         |
| Experience with individuals with special needs, n (%) |                |                |                |         |
| Present                                               | 5 (15.6)       | 6 (17.6)       | 5 (15.2)       | .912    |
| No                                                    | 27 (84.4)      | 28 (82.4)      | 28 (84.8)      |         |

Note. <sup>a</sup> Kruskal-Wallis test; <sup>b</sup> Chi-square. Abbreviations: Q1=first quartile; Q3=third quartile.  $p < .05$  was considered statistically significant

In our study, when the pre-test–post-test comparisons of the groups were examined, a significant increase was observed in both Group 1 and Group 2 on all three scales ( $p < 0.05$ ). In contrast, no significant change was observed on any scale in Group 3 ( $p > 0.05$ ) (Table 4).

In the intergroup comparison analyses conducted in our study, statistically significant differences were found for all three

variables ( $p < .05$ ). To determine which groups these differences originated from, a post-hoc Bonferroni test was applied. The analysis revealed that Group 1 and Group 2 were significantly different from Group 3 for all three variables ( $p < .05$ ), but there was no significant difference between Group 1 and Group 2 ( $p > .05$ ). Furthermore, the eta-squared ( $\eta^2$ ) values obtained from the effect size analyses were .30 for PCCSAS, .49 for MAS, and .40 for KAOP, indicating a large effect size (Table 5).

Table 4. Pre-test–post-test results by group

| Measurement Results | Pre-test (M±SD) | Post-test (M±SD) | Test Statistic  |
|---------------------|-----------------|------------------|-----------------|
| <b>PCCSAS</b>       |                 |                  |                 |
| Group 1             | 45.72±3.06      | 52.06±3.53       | W=15.0, p<.001  |
| Group 2             | 43.18±3.42      | 47.50±3.91       | W=0.0, p<.001   |
| Group 3             | 44.52±3.36      | 44.15±3.31       | W=78.0, p=.189  |
| <b>MAS</b>          |                 |                  |                 |
| Group 1             | 100.47±7.94     | 105.66±5.55      | W=0.0, p<.001   |
| Group 2             | 98.35±5.72      | 105.26±8.08      | W=0.0, p<.001   |
| Group 3             | 101.91±7.09     | 99.97±12.54      | W=165.5, p=.796 |
| <b>KAOP</b>         |                 |                  |                 |
| Group 1             | 93.59±4.25      | 98.72±4.42       | W=0.0, p<.001   |
| Group 2             | 89.76±8.09      | 96.00±7.79       | W=0.0, p<.001   |
| Group 3             | 90.48±8.40      | 89.30±10.77      | W=92.0, p=.056  |

Note. W: Wilcoxon signed-rank. Abbreviations: M±SD= mean±standard deviation. p<.05 was considered statistically significant

Table 5. Comparison of between-group difference scores

| Measurement Results | Group 1 (n=32) | Group 2 (n=34) | Group 3 (n=33) | Test Statistic     | n <sup>2</sup> |
|---------------------|----------------|----------------|----------------|--------------------|----------------|
| PCCSAS              | 6.34±4.96      | 4.32±2.14      | -0.36±2.29     | H(2)=30.71, p<.001 | 0.30           |
| MAS                 | 5.19±2.87      | 6.91±6.38      | -1.94±6.13     | H(2)=48.77, p<.001 | 0.49           |
| KAOP                | 5.13±3.11      | 6.24±7.61      | -1.18±3.84     | H(2)=40.46, p<.001 | 0.40           |

Note. H=Kruskal–Wallis test. Abbreviations: M±SD=mean±standard deviation. p<.05 was considered statistically significant

## DISCUSSION

Our study was conducted to investigate the effects of psychosocial rehabilitation practices implemented through different educational methods on students' approaches toward individuals with disabilities and older adults. The findings of the study clearly demonstrated that psychosocial rehabilitation training, whether delivered alone or combined with practical modules, positively affected students' attitudes and competencies toward disadvantaged groups. When comparing the first group, which received both psychosocial rehabilitation training and practical training, with the second group, which received psychosocial rehabilitation training only, significant improvements were observed in all three variables before and after the intervention; however, no significant changes were found in the third group, which followed the traditional curriculum. Intergroup analyses further indicated that both Group 1 and Group 2 showed significantly more positive outcomes than Group 3, highlighting the effectiveness of structured psychosocial rehabilitation training regardless of delivery format. Although no significant difference was detected between Group 1 and Group 2, the consistent improvements across both intervention groups suggest that even theoretical training alone can meaningfully enhance students' awareness, sensitivity, and readiness to work with geriatric and disabled populations.

Most studies in the literature have been conducted on situations affected by psychosocial rehabilitation. However, our study investigated the hypothesis of which educational method might be more effective in teaching psychosocial rehabilitation. Therefore, our study contributes to the literature as one of the preliminary studies in this field.

The between-group difference scores shown in Table 3 can be better understood in light of the existing literature presented above. The significant increases observed in both the application+psychosocial rehabilitation group (Group 1) and the psychosocial rehabilitation-only group (Group 2) parallel previous findings demonstrating that psychosocial care practices support more comprehensive patient assessments, improve communication, and contribute to professional development, as reported in the 2025 study on final-year nursing students<sup>14</sup>. Similarly, the positive attitudinal changes detected in our groups receiving structured training are consistent with the favourable outcomes reported in online physical–mental health rehabilitation interventions after the pandemic<sup>(15)</sup> and in systematic reviews indicating that innovative and immersive psychosocial rehabilitation methods enhance functional and cognitive engagement<sup>(16)</sup>. The improvement in attitudes toward individuals with disabilities observed in our intervention groups is also aligned with findings from Ayşe & Altuğ (2021) and Çam

et al. (2024), both of whom showed that education related to disability significantly strengthens students' multidimensional attitudes (17,18). Likewise, the literature on contact-based interventions supports our observation that structured psychosocial training—whether theoretical or practice-based—can lead to meaningful attitudinal and behavioural change (19). For attitudes toward older adults, the positive changes in Group 1 and Group 2 correspond with studies showing that knowledge of ageing and increased exposure to older adults improve students' attitudes (20), and that direct contact or simulation-based training fosters empathetic and positive perceptions (21,12). The absence of improvement in Group 3, which followed the traditional curriculum, further supports the evidence that attitudes do not change without intentional educational exposure. Collectively, these comparisons indicate that the differences observed in Table 3 are strongly supported by previous research and reinforce the value of structured psychosocial rehabilitation training in shaping student attitudes and competence.

Psychosocial care competence, one of the variables evaluated in our study, has been one of the topics in the literature in recent years. In this context, a study published in 2025 examined the reflections of the effects of psychosocial care in clinical practice on the experiences of final-year nursing students working with physically affected individuals. As a result of the study, they shared their experience that thanks to psychosocial care, patients could be subjected to a more comprehensive assessment, healthier communication could be established, and psychosocial care was necessary both in the professional training process and in post-graduation education<sup>14</sup>. In a study conducted by McGregor et al. in 2024, researchers divided individuals affected by Covid-19 into two groups after the pandemic and assessed their physical and mental health status. While individuals in the intervention group underwent online physical and mental health rehabilitation programmes, the control group received normal care. The study found significant changes in favour of the intervention group compared to the control group in parameters such as quality of life, depression, and fatigue. These changes were reported to continue at 12 months (15). In a study conducted by Tan et al. in 2022, a systematic review was designed and conducted to determine the effectiveness of virtual reality and augmented reality interventions in psychosocial rehabilitation. This review concluded that virtual reality and augmented reality interventions have positive effects on functional performance. It was reported that this positive effect was supported by the bridging characteristics of the interventions among ongoing psychosocial rehabilitation programmes (16).

In our study, the psychosocial care competence variable also showed significant variation between the application+psychosocial rehabilitation training group and the groups that only received psychosocial rehabilitation training. This is consistent with the literature.

Another variable we examined in our study was attitudes towards individuals with disabilities. There are various studies in the

literature on this subject. In this context, a study conducted by Ayşe and Altuğ in 2021 aimed to determine students' positive and negative attitudes towards individuals with disabilities and their views on the educability of individuals with disabilities. Within the scope of the study, an evaluation was conducted before taking the psychosocial rehabilitation course and at the end of the period when the psychosocial rehabilitation course was also included. The researchers reported that there were positive significant changes in terms of both variables as a result of the study<sup>17</sup>. In a study conducted by Çam et al. in 2024, the multidimensional attitudes of students studying at the faculty of health sciences towards people with disabilities were evaluated. The study reported that the attitude scores of students who stated that they had taken courses on disability and people with disabilities were significantly higher than those of other students<sup>18</sup>. In a study conducted by Al Ma'ani et al. in 2022, the effects of a contact-based intervention applied to students working with patients with mental illness on their attitudes and behaviours were investigated. In this context, nursing students were divided into two groups: an experimental group and a control group. The results of the study showed a significant positive difference in the experimental group that received the contact-based intervention compared to the control group (19).

Our study also investigated the effects of psychosocial rehabilitation training, applied in different ways, on students' attitudes and behaviours towards individuals with disabilities. Consistent with the literature, our study also showed that the multidimensional attitude variable towards individuals with disabilities varied significantly between the application+psychosocial rehabilitation training group and the groups that only received psychosocial rehabilitation training.

One of the variables included in our study is the assessment of attitudes towards the elderly. In the literature, there is a study conducted by Zhang et al. in 2024 on this subject. The study was conducted on rehabilitation students in Southwest China regarding their knowledge of ageing, their attitudes towards the elderly, and their willingness to participate in geriatric rehabilitation. A total of 890 rehabilitation students were evaluated in the study. The results showed that students who had lived with the elderly and had good relationships with them had a significantly positive attitude towards the elderly in terms of the attitude variable towards the elderly. In addition, students who had frequent contact with the elderly had higher attitude scores than students who had less contact (20). In 2016, Augustin and Freshman conducted a study aiming to examine changes in university students' attitudes and behaviours towards the elderly through an intervention involving direct service provision/contact. As part of the study, students were assigned to different institutions with elderly residents and participated in activities involving direct contact and service provision. A pre-assessment and a final assessment after 21 months were conducted in the study. The results of the study reported a significant and positive difference in one of the parameters evaluated, namely attitudes towards the elderly (21).

In 2022, Arrongate et al. conducted a study to determine the attitudes and empathy levels of undergraduate students towards the elderly after simulation training. Participants were assessed before and after the intervention. The intervention included geriatric scenarios. The study reported that simulation-based training significantly and positively changed attitudes towards the elderly (22).

In our study, significant changes were also observed in students who received practical training. This indicates that our study is consistent with the literature.

### Limitations of the Study

The main limitations of our study include its single-centre design, lack of blinding, short-term follow-up, and the provision of short-term training.

### CONCLUSION

This study demonstrated that psychosocial rehabilitation training, especially when supported with applied components, positively influences students' attitudes and psychosocial care competence toward geriatric and disabled individuals. These findings contribute to the literature by showing that different educational methods can meaningfully shape future healthcare professionals' perspectives an area that has been less explored compared with clinical psychosocial interventions. Based on these results, it is recommended that psychosocial rehabilitation education be integrated more systematically into undergraduate health curricula and enriched with practical or experiential learning activities. Future studies could examine the long-term sustainability of these improvements and explore how such training can be adapted for different student populations.

### Conflict of Interests

*The authors declare that there is no conflict of interest in the study.*

### Financial Disclosure

*The authors declare that there is no financial support.*

### Ethical Approval

*The study protocol received approval from the Artvin Çoruh University Scientific Research and Publication Ethics Committee on 12 June 2025 (Approval No: E-18457941-050.99-181730).*

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