

INFLUENCE OF MOTOR ABILITIES ON LEARNING OF ALPINE SKI TECHNIQUE

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Introduction



This study investigates the impact of motor abilities on the acquisition of alpine ski techniques among beginners.



The research aims to identify how specific motor skills and morphological characteristics contribute to learning ski techniques.



Understanding these influences can help in developing targeted training programs to enhance skiing proficiency and safety, especially for young individuals who are less physically active.

Methods

Participants: 86 male beginners, average age 22.76 years.



Testing: Motor abilities assessed through 17 tests, including:



Balance



Agility



Explosive and static strength



Movement frequency



Flexibility

Morphological Measurements



Body height



Body mass



Body fat percentage



Right thigh girth

Morphological Measurements



7 days of alpine skiing training

Followed by skill assessment in seven ski techniques by five independent judges.

Results and Discussion



Agility

Found to be the most significant factor, influencing all ski techniques, especially traversing ($\beta = .38; .26$), uphill turns ($\beta = .33; .23$), basic turns ($\beta = .18$), parallel turns ($\beta = .32$), and short turns ($\beta = .34$).



Static Leg Strength

Contributed significantly to learning uphill turns ($\beta = .19$), basic turns ($\beta = .35$), and parallel turns ($\beta = .27$).



Balance

Particularly important for basic elements of skiing such as traversing ($\beta = .23; .28$) and uphill turns ($\beta = .24$).



Morphological Characteristics

Body height negatively impacted skiing ability ($\beta = -0.5$), indicating taller beginners faced more challenges. In contrast, body mass had a positive effect on uphill turns due to better ski pressure application.

Morphological Measurements

Data Analysis: Regression analysis to determine the influence of motor and morphological characteristics on skiing skills; factor analysis to evaluate overall skiing knowledge.

Conclusion

Agility, static leg strength, and balance are critical motor abilities influencing beginners' alpine ski learning. Taller individuals may face more challenges in acquiring ski skills. Proper fitness preparation focusing on these abilities is recommended for beginner skiers to improve learning efficiency and reduce injury risks.

Summary

This study highlights the essential motor abilities contributing to learning alpine skiing. **Agility, static leg strength, and balance were found to significantly affect skill acquisition.** These findings suggest that targeted fitness training can enhance skiing proficiency, especially for those new to the sport. Taller skiers may require additional support due to the negative impact of height on skiing ability. Overall, the study underscores the importance of pre-ski fitness preparation to optimize learning and safety in alpine skiing.