PRE-START ANXIETY SELF-REGULATION METHODS OF TOP ALPINE SKIERS

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Abstract. *Alpine skiing is the kind of sport where there is little time for proving athletes' abilities – the number of attempts is so low that each of the smallest mistakes reflects highly on the result of the participant. The aim of this study is to extend the knowledge of psychological preparation in Alpine skiing at a high performance level. This Article presents results of the research, which focused on the relationship between Alpine skier's competition effectiveness and their competition anxiety levels, along with selected methods of emotional condition self-regulation before the start. The research is based on studying the world's top athletes, who participated in an international alpine skiing race at least 6 times per season. The research is based on theoretical materials and empirical investigation, where 86 of the world's top 200 ranked alpine skiers participated in a test and filling out of a questionnaire about their preparation for competition. The obtained results testify that most high-ranking athletes have created their own individual system of psychological skills, which contains both somatic and cognitive means of controlling emotional states. Usually only a few anxiety reduction methods are picked by athletes, depending on their self-evaluated emotional state before a given competition. A link between competition anxiety levels and an Alpine skier's competition effectiveness is generally confirmed. Research results show that top Alpine skiers' competition effectiveness will be better if anxiety levels are low or moderate, and the results will improve if the self-regulation of pre-start emotional states is based on practised adapted breathing, self-inspiration, visualisation and ideomotor methods.*
Keywords: *alpine skiing, anxiety, competition effectiveness, psychological skills, self-regulation*

Introduction

In Alpine Skiing, as in any high achievement sport, competitions are an especially important moment for each athlete to prove their abilities. The athlete is being prepared for it from the very first day, so that he or she can display the maximum of their performance right at the needed moment (Perry, 2016). For this reason a very important role is played by psychological preparedness, which is especially important in Alpine Skiing, where the athlete's control of own abilities is shown during the first and only attempt, in a short and concrete span of time,

during which the athlete needs to attain their best result (Taylor, 2000). That is exactly why a very important stage in achieving the desired result is the athlete's preparedness before start, i. e. how the athlete focuses on executing the goals that have been set and how he or she controls own emotional states in practice and especially before competition start (Smith, 2012). The key point for a successful race is to reach athlete's optimal level of arousal.

At the very highest level, each athlete may have their own psychological preparation formula, which may not conform to generally accepted, usual methods of preparation. Consequently, more is being spoken about individualizing self-regulation features, and self-awareness as an important component in athlete's successful performance (Taylor, 2017). Research focused on the dependence of Alpine skiers' competition effectiveness on self-evaluated emotional conditions and selected self-regulation methods before the start.

Aim of research: to evaluate the relationship between high class Alpine skiers' competition anxiety, most commonly applied pre-start emotional state self-regulation methods and race effectiveness. Research methods: theoretical – literature analysis; empirical – analysis of competition protocol, SCAT questionnaire, and survey of the athletes about their preferred pre-start emotional state self-regulation methods; statistics.

The Theoretical Background

Nowadays dynamic sport is characterized not only by the impact of high physical loads on the body during training and competitions, but also by heightened psychological tension. Athletes often experience extreme situations during competition, and if they are unable to adapt and overcome those, then stable achievements are unlikely (Weinberg & Gould, 2015). The most important factors of successful competition performance are: the level of athlete's skill and preparedness, athlete's personality traits, conditions of the given competition environment, dominant emotional states, and self-regulation skills (Abele, 2018). The main aim of athletes' psychological preparation is to ensure such psychological state in competitions, which allows the athlete to fully make use of his/her functional abilities and show the best possible competition result. Research has been conducted, whose results give evidence to diverse methods and techniques used by athletes in overcoming anxiety, for example, professional athletes tend to use more physical rather than mental relaxation techniques for coping with competitive anxiety than athletes from recreational and collegiate levels (Kudlackova, Eccles, & Dieffenbach, 2013).

Analysing mountain skiing from a psychological point of view, it is considered a very difficult sport:

- First of all, mountain skiing is a very rigorous sport that requires to accurately combine the sense of time and space through coordination, speed, endurance and the ability to make quick decisions (Petersen, 2004). The shortest Slalom tracks are up to 60 seconds long, during which the athlete has to do about 60 gates. This means that the athlete on the track is in a continuous, fast-paced motion, where every moment has a decision that needs to be made about the right line, power investment, ski angle and other factors that determine the athlete's speed on the track.

- Secondly, there are important biomechanical influences in mountain skiing, which, in combination with external environmental factors (weather conditions, snow quality, track and pavement quality), form a very complex background for the athlete. An incorrectly approached trajectory before a pole often leads to losing speed for the next one, withdrawing it or falling. An incorrect trajectory can often differ from a correct trajectory by just 5 centimetres. For this reason, mountain skiing is a very unpredictable sport where athletes often leave without reaching the finish line.

- Thirdly, in mountain skiing, athletes are often forced to train and participate in competitions under the influence of cumbersome environmental factors: altitude, cold, weather conditions that require a high mental strength and physical effort. All this has to be complemented by one more specific feature of mountain skiing – there will never be 2 identical tracks in the mountain ski race, which means that the athlete will always take the race as the first race on that particular track. That is why mountain skiing requires a specific psychological readiness of athletes, which develops a fast perception of new information and technically correct performance of the task at the first time.

Psychological skill training in mountain skiing is first and foremost aimed at psychological preparation and self-adjustment for the start. A system of psychological skills as close as possible to race conditions is being created and developed (Taylor, 2018). Taking into account the body's reaction and manifestations of anxiety, it is important to create an athlete's psychological training system that can help to strengthen the athlete's physical and mental qualities, as well as improve the athlete's adaptation to changing environment and competition conditions, thus minimizing the worry and energy consumption during the race (Perry, 2016). The most often used methods, techniques and

interventions used in psychological preparation of high performance athletes allow the athlete to evaluate the impact of their personality traits and cognitive condition and processes on the result. It teaches them to relax and concentrate, to deal with negative emotions, to use imagery and visualization, to prepare for the competition and optimize self-confidence, promoting the basic principles of "positive self-talking", to initiate strategies and motivations for setting goals (Gould & Maynard, 2009). In general, athletes and coaches know that psychological preparedness has a huge impact on the outcome of the race, but it was found through polls that during the recovery period, the recuperation of mental skills is used much less frequently than the services of physiotherapists. The brain not only controls the whole body, but also helps to encode and structure all incoming and outgoing information in an appropriate manner for each athlete. That's why the brain would need to be trained just as much as skiing skills or physical fitness (Taylor, 2017).

In preparation for the competition one of the most important indicators of the pre-start emotional state is the competitive anxiety. Athletes under seemingly similar environmental influences can experience signs of pre-start fever, and pre-start apathy and readiness differently, as each athlete has a different personality that perceives and interprets environmental factors differently and experiences them in different modalities of emotion. This determines the need for each athlete to look for personalized formulas and self-regulation methods to optimize his pre-start emotional state (Mischel, 2014). Self-control as the ability to control yourself and your emotions, as well as maintain balance in any situation is one of the cornerstones of successful results and success in sport (Perry, 2014). The ability to deliberately regulate emotional states allows an athlete to eliminate distracting thoughts, raise self-confidence, and maintain focusing ability at an optimal level. There is a wide range of anxiety coping strategies and techniques that generally fall into somatic, cognitive and multimodal anxiety reduction techniques. Research emphasizes that learning and applying mental strategies is closely related to the interpretation of anxiety (Taylor, 2016). It determines the need for individualization of mental strategies and techniques for each high-end athlete in preparation for the race, which we also decided to explore.

Methodology

The criteria for selection of respondents was based on the specificity of alpine skiing and results evaluation in FIS points (FIS, 2017). The chosen research subjects were the world's best Alpine skiers (slalom and descent disciplines):
- aged of 16 years and above;
- who had shown at least 10 results in the previous season and had earned at least 10 FIS world ranking points;

- up until the start of the 2017/2018 winter season had achieved a position in The World TOP30 to TOP200 Ranking.

Qualitative participation in the study was provided by 86 athletes from 24 countries. All participants are athletes of alpine skiing (in slalom and downhill disciplines), ranked between the 38th to 200th place in the world ranking. The best (TOP30) athletes were disregarded because they had won World Cup points that were significantly different from World Ranking Points and would not have equally comparable indicators in the process of calculating skier performance.

In order to determine the athlete's subjective anxiety self-assessment and its manifestations before the start, as well as the more commonly used techniques of emotional regulation, athletes were surveyed about their preferred pre-start emotional state self-regulation methods using the Likert scale

To determine the athlete's level of Anxiety, the Martens Sports Competition Anxiety Test (SCAT) questionnaire was developed, defining an athlete's high, medium and low anxiety level (Martens, 1990).

To calculate race performance scores, the average score for each athlete from all season finals in the slalom was calculated without taking into account the maximum and minimum seasonal FIS scores, which often vary in a large range with a marked offset from the average. 78 mountain skiers in the slalom were selected to evaluate their race performance, where they showed at least 6 results in terms of FIS points in a given season. These mountain skiers ranged from 18 to 30 years old, with an average age of 24, a sports experience of 10 to 25 years, and an average mountain ski FIS experience of 8 years. The results of these slalom skiers were divided into high, medium and low race performance groups. The obtained results were outlined with described statistics.

Research results

When evaluating the SCAT results of 86 respondents (slalom and downhill athletes), it was noticed that the majority of athletes had a low score, which indicates their high competence. 49 athletes had a medium and 27 athletes had a low anxiety level, while it was high for only 10. Summarizing their responses on subjectively experienced anxiety before start, its manifestation and most commonly used methods for controlling emotional states, it was found that:

- 77% of the respondents believe that they begin feeling anxiety on the day of competition or right before start. Only 5% of alpine skiers said that they started experiencing anxiety on the previous day or earlier, while 18% could not provide a conclusive answer;

- 47% of the respondents said they did experience anxiety during the competitions, while 34% said they did not, and 19% could not provide a conclusive answer;
- 74% of the respondents also regularly used self-regulation methods during training, 16% only used them in certain occasions, and 12% did not use them at all;
- 76% of the respondents had created a pre-start psychological preparation routine, which they applied regularly before each start, 12% had created one and used it in certain occasions, while 12% had not created one.

To break it up, it could be said that 64 out of the 86 athletes included either some psychological preparation elements or a whole array of those in their pre-start preparation, 10 athletes do not use any methods, while 12 athletes would only use them on occasion.

The results obtained on emotion self-regulation methods most commonly used by alpine skiers (slalom and downhill) in their own estimates can be seen in Figure 1. Each alpine skier was allowed to tick several responses, and the most commonly acknowledged ones were visualization exercises (53 times), and pre-start routine (33 times). The next most common ones were somatic anxiety reduction techniques.
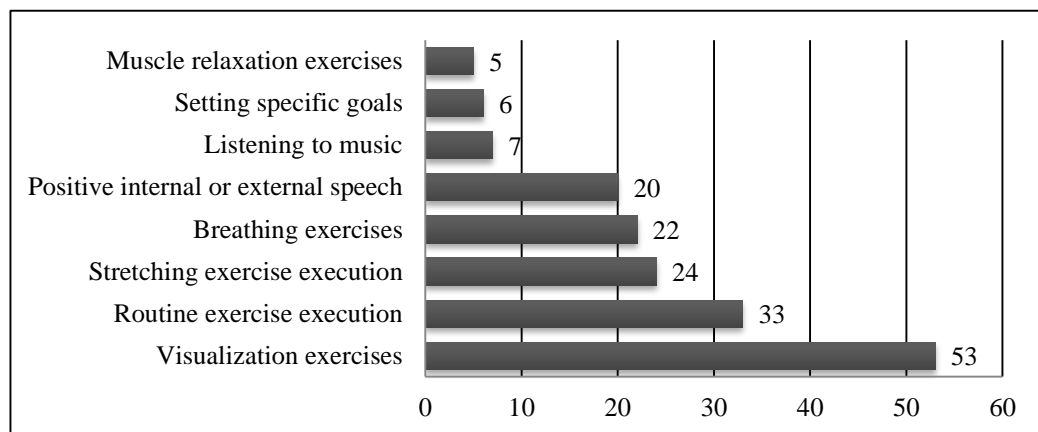
Figure 1 **The most frequently used methods of self-regulation by alpine skiers before the start (choice count)**

From the obtained results it can be concluded that in general the use of pre-start psychological preparation methods is quite widespread among high class alpine skiers. They help to both achieve the desired emotional state, and also activate cognitive processes, which help to effectively overcome obstacles set by the track and surrounding environment.

So, how did the athlete's average seasonal race results contrast with the anxiety levels found in the SCAT test? These results were evaluated for slalom only, so that the criteria for evaluating results were maximally homogeneous. Figure 2 shows the relationship between competition anxiety levels of 78 athletes and their competition success rates.
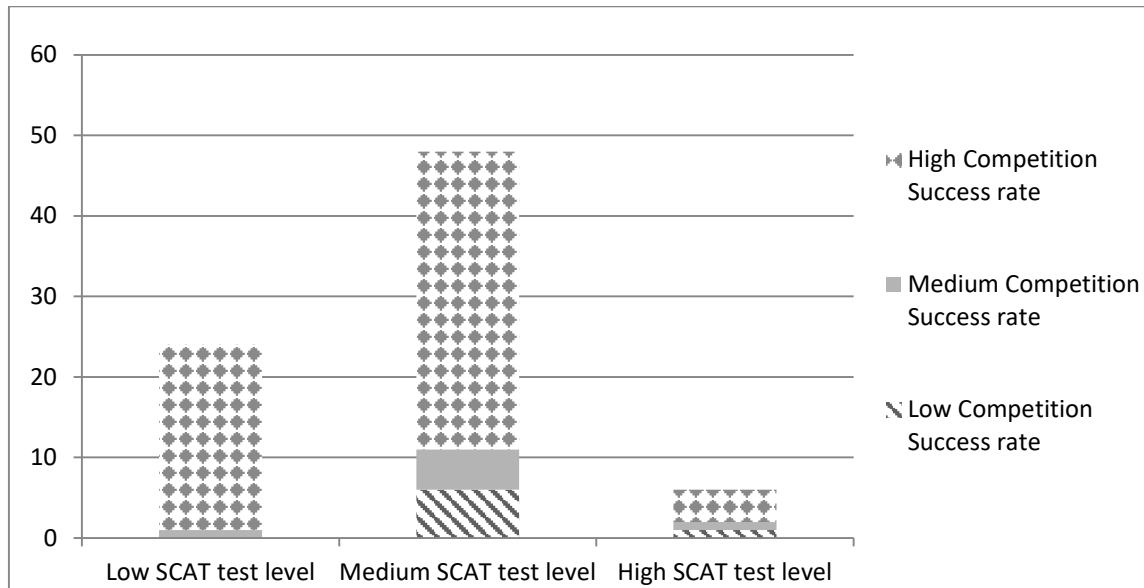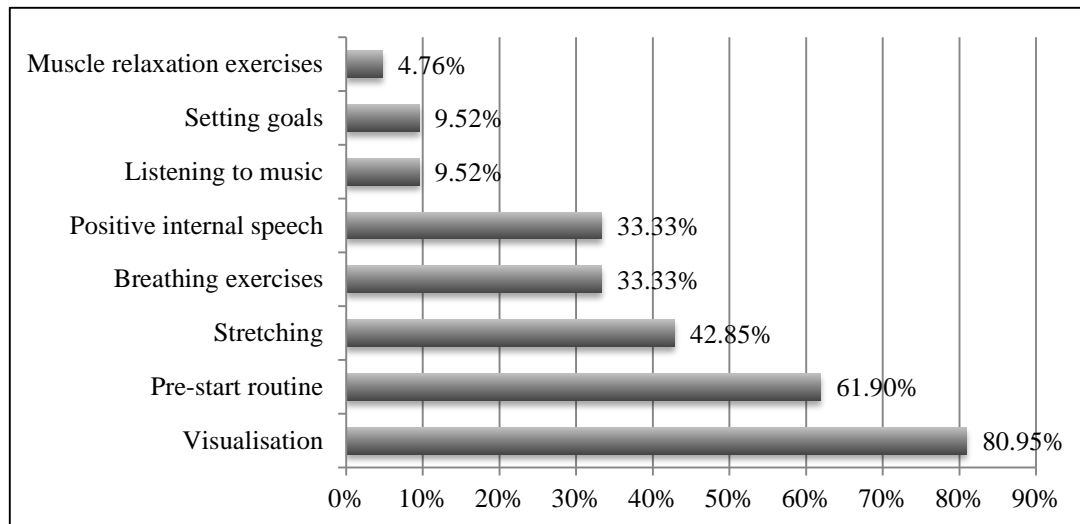
Figure 2 **Slalom racer Anxiety level and Competition Success rate (number of athletes)**

When looking at the relationship between SCAT test results and FIS points, it can be seen that 95.83% of the 24 respondents, who were determined to have a low competition anxiety level, were also calculated to have a higher occurrence of results, which is below the medium number of FIS points and indicates high achievement. At the same time 87.50% of the 48 respondents, who were determined to have a medium competition anxiety result, most commonly attained competition results around the medium number of FIS points. It is interesting to note that 6 athletes with a high competition anxiety test result still attained high competition results 83% of the time.

When evaluating the competition effectiveness of alpine skiers, it is clearly visible that a correlation exists between an athlete's anxiety indicators and season's competition results. The link between low anxiety levels and stable high competition results of almost all low anxiety athletes is completely understandable. The same can be said about the 48 medium anxiety level athletes, the majority of whom, 37, showed good results. However, 4 out of 6 high anxiety level athletes also showed good competition results, which might be explainable by extremely good emotional self-regulation skills. It was therefore interesting to analyse and compare the most commonly used self-regulation methods among

athletes with diverse anxiety and success indicators. Figure 3 depicts the most commonly used self-regulation methods among athletes with low anxiety levels and high or medium competition success rates. The choices of athletes with medium anxiety levels and high or medium competition success rates were fairly similar.

Figure 3 **Pre-start self-regulation techniques of slalom racers with low anxiety levels and high or medium competition success rates**

A noticeable difference could be observed in the answers of athletes with high anxiety levels and high or medium competition success rates, where several self-regulation methods were being used concurrently. All athletes made use of positive internal and external speech, visualisation and breathing exercises, but the majority did so along with a pre-start routine and muscle relaxation exercises.

Conclusions and recommendations

Alpine skiers make use of several different self-regulation methods, and each athlete picks them in accordance with specific competition environment to suit the individually experienced anxiety level and competition goal that's been set. Among the most commonly used methods one should mention positive internal and external speech, visualisation, breathing exercises, pre-start routine, and muscle relaxation.

Incorporating experience of the sport, and summarizing the results, several recommendations can be given to athletes:

- To self-regulate the pre-start psycho-emotional state for athletes with tendency towards low and moderate anxiety levels it would be desirable to make more use of visualisation, a pre-start routine, stretching,

breathing and positive speech exercises, which have been developed during training and are fully trusted by athletes by the time of competition.

- For athletes with a tendency towards a high anxiety level, it would be advisable to combine several methods for regulating pre-start psycho-emotional levels, and, by testing during training, the most suitable ones for each athlete individually should be picked, to reduce the anxiety level more effectively and reach an optimal emotion state before start. It is worth remembering that often the most crucial time are the 15 minutes leading up to start, and only the most tested and trusted self-methods should be used then rather than spend time frantically performing every possible one.

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