

## **THE ANALYSIS OF PRE-COMPETITIVE STATES OF DOWNHILL SKIERS**

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### **Keywords:**

- cognitive anxiety
- somatic anxiety
- self-esteem
- gender

### **Abstract:**

The level of pre-competitive states of skiers is one of the most important psychological factor that could significantly influence the performance in downhill skiing. The purpose of the present study was to evaluate gender differences as well as differences between the first and the final round in the level of pre-competitive anxiety and self-esteem of downhill skiers. A sample of 20 alpine skiers aged 14.35 years were diagnosed using CSAI-2R questionnaire during Slovak national championships called RESPECT CUP in High Tatras. Based on the results analysis we can conclude that skiers perceived higher intensity and frequency level of cognitive and somatic anxiety prior to start in the first round comparing to the final one. Intersexual differences revealed higher level of somatic and cognitive anxiety of female skiers. Male skiers perceived intrusions of anxiety as well as self-esteem more positively than female skiers considering the upcoming performance. Finally, male and female skiers experienced higher level of somatic anxiety intensity than cognitive one.

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### **INTRODUCTION**

In today's world of competitive sports, a lot of pressure is placed on athletes to perform at their best [13]. It has been recognized for many years that psychological factors such as anxiety and self-esteem play an important role in competition [8,15]. It was also revealed that low self-esteem has the greatest effect on performance [3]. Moreover, self-esteem acts as a mediator between cognitive and somatic anxiety. The result is that an athlete perceives themselves as not able to complete an upcoming task so it causes worry which then leads to further somatic anxiety. Furthermore, negative thoughts then lead to low self-esteem, which then causes poor performance of athletes. On the other hand, self-esteem tends to have an inverse relationship with cognitive and somatic anxiety, meaning when someone has a high level of self-confidence, they tend to have lower levels of cognitive and somatic anxiety [9]. What is also important to take into consideration regarding pre-competitive states of athletes are different variables such as gender or type of sport. In individual sports, there is a high level of self-esteem and low anxiety comparing to collective ones [6]. Therefore, individual sports like downhill skiing seem to be associated with a benefit to individuals in terms of emotional control [6]. Gender differences, regarding anxiety and self-esteem experiencing, were found in several studies [16] in which female perceived higher level of anxiety components as well as lower self-esteem than male athletes. The study of emotional fluctuations prior to start in relation to performance of athletes could provide a perspective of innovative research that could contribute to a better understanding of the relationship between emotions and performance [4].

## THE AIM OF THE WORK

The aim of the paper is to evaluate gender as well as between rounds differences in the level of intensity, frequency and direction of pre-competitive anxiety and self-esteem of downhill skiers.

## THE MATERIAL AND THE METHODOLOGY

The experimental group consisted of 20 downhill skier (10 male and 10 female skiers) aged 14.35 years who compete on national as well as on international level. The research was applied during Slovak national championships called RESPECT CUP in one of High Tatras skiing resort. The start of slalom and whole competition were organised in clear weather with the temperature of -21 degrees of Celsius, 770 meters above the see level.

Research was organised in two phases. In the first phase, the level of pre-competitive anxiety and self-esteem of downhill skiers were diagnosed using CSAI-2R questionnaire approximately 20 minutes prior to individual skier start in the first round. The same procedure was repeated 20 minutes prior to individual skiers start in the second round of competition.

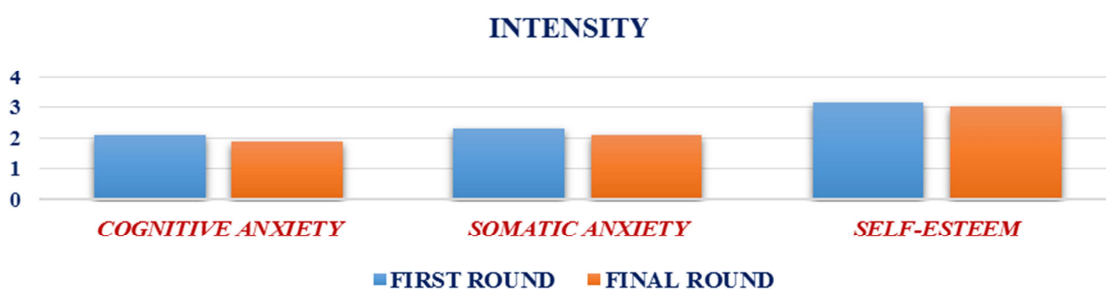
The level of pre-competitive anxiety and self-esteem was analysed using French standardized version of CSAI-2R questionnaire [10]. Questionnaire consists of 16 items that evaluate intensity (from 1-none up to 4-the highest), frequency (from 1-never up to 7-always) and direction (range from -3 -debilitative, 3 -facilitative, 0 – no direction) of cognitive (5 items), somatic anxiety (7 items) and self-esteem (5 items). Three qualified linguists translated the questionnaire to Slovak language and translated material was compared as well as modified [5]. Standardization process of French CSAI-2R version was applied on 642 sportsmen in individual and collective sports within age range from 10 to 25 years.

For calculating gender and between rounds differences in the level of intensity, frequency and direction of cognitive, somatic anxiety and self-esteem, mean of central tendency measures and standard deviation of variability measures were used.

## RESULTS

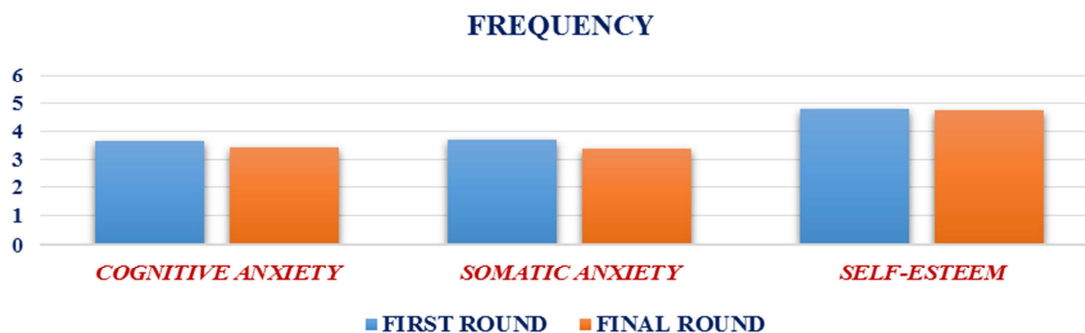
### *Analysis of pre-competitive anxiety and self-esteem between first and final round*

The first part of analysis is focused on differences between self-esteem and anxiety components prior to start in the first and the final round. Results indicated (see Figure 1.) that the level of cognitive anxiety intensity in the first round was higher ( $M = 2.13$ ;  $SD = 1.10$ ) comparing to the one experienced in the final round ( $M = 1.89$ ;  $SD = 0.91$ ). Percentage decrease between rounds was 11.27%. The same results were found in the frequency component of somatic anxiety. Skiers experienced higher intensity of somatic anxiety in the first round ( $M = 2.34$ ;  $SD = 0.90$ ) than in the final one ( $M = 2.11$ ;  $SD = 0.89$ ). The difference was presented by 9.83% decrease. On the contrary, skiers perceived higher intensity (3.28%) of self-esteem in final round ( $M = 3.15$ ;  $SD = 0.76$ ) than in the first one ( $M = 3.05$ ;  $SD = 0.90$ ).



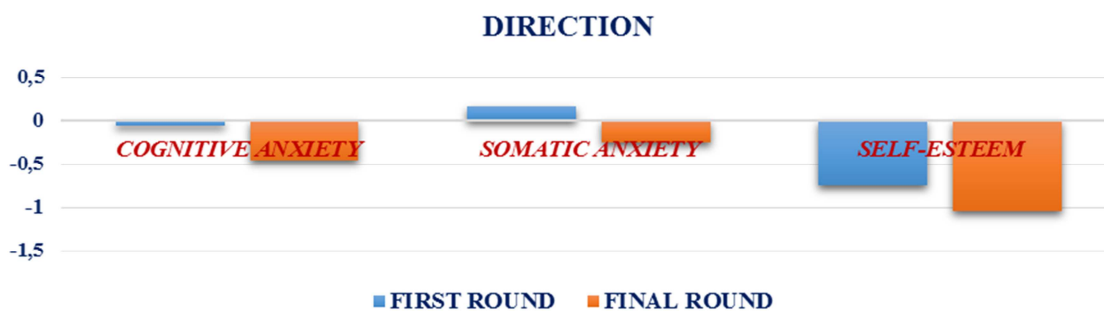
**Figure 1.** The intensity of somatic anxiety, cognitive anxiety and self-esteem prior to the first and the final round

Considering the frequency of cognitive anxiety (see Figure 2.), the results showed its higher level (6.28%) in the first round ( $M = 3.66$ ;  $SD = 2.31$ ) than in the final one ( $M = 3.43$ ;  $SD = 2.05$ ). Moreover, the first round ( $M = 3.73$ ;  $SD = 1.79$ ) and the final round ( $M = 3.41$ ;  $SD = 1.66$ ) results, regarding somatic anxiety frequency, indicated difference of 8.58%. Skiers prior to start perceived slightly lower level (0.21%) of self-esteem frequency in the final round ( $M = 4.77$ ;  $SD = 1.61$ ) comparing to the first one ( $M = 4.78$ ;  $SD = 1.65$ ).



**Figure 2.** The frequency of somatic anxiety, cognitive anxiety and self-esteem prior to the first and the final round

The analysis of the third component (see Figure 3.) of pre-competitive states showed positively perceived intrusions of cognitive anxiety in both the first ( $M = -0.07$ ;  $SD = 1.93$ ) and the final round ( $M = -0.46$ ;  $SD = 1.57$ ). The same results were found in self-esteem perception of intrusions perceived by skiers in the first ( $M = -0.76$ ;  $SD = 1.45$ ) and the final round ( $M = -1.05$ ;  $SD = 1.45$ ). However; there were visible differences between the first and the final round considering cognitive anxiety (84.78%) and self-esteem (27.62%) were skiers perceived the intrusions of both components more positively prior to start in the final round. The same results were found in somatic anxiety with the difference (62.5%) between the first ( $M = 0.15$ ;  $SD = 1.67$ ) and the final round ( $M = -0.25$ ;  $SD = 1.58$ ).



**Figure 3.** The direction of somatic anxiety, cognitive anxiety and self-esteem prior to the first and the final round

### ***Analysis of pre-competitive anxiety and self-esteem from the aspect of gender***

The second part of analysis is focused on intersexual differences in the level of intensity, frequency and direction of self-esteem and anxiety components. Regarding the intensity (see Figure 4.), female skiers perceived higher level of cognitive anxiety ( $M = 2.08$ ;  $SD = 0.99$ ) comparing to male skiers ( $M = 1.94$ ;  $SD = 1.04$ ). The value of percentage difference was 6.73% in favour of male skiers. Furthermore, values of somatic anxiety intensity of female skiers ( $M = 2.41$ ;  $SD = 0.85$ ) were higher than male ones ( $M = 2.04$ ;  $SD = 0.91$ ). The difference was 15.35% in favour of male skiers. Self-esteem intensity experienced by male skiers ( $M = 3.17$ ;  $SD = 0.93$ ) was higher (4.42%) than the one experienced by female skiers ( $M = 3.03$ ;  $SD = 0.73$ ).

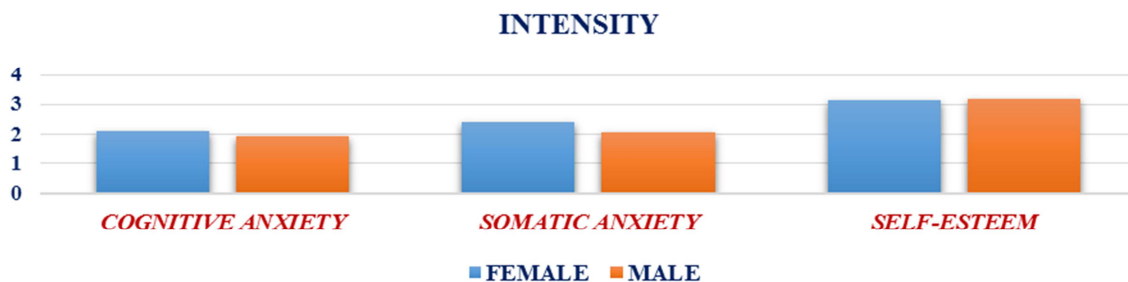


Figure 4. Gender differences in the intensity of somatic anxiety, cognitive anxiety and self-esteem

Results indicated (see Figure 5.) that female skiers ( $M = 3.66$ ;  $SD = 2.07$ ) experienced higher level (6.7%) of cognitive anxiety frequency than males ( $M = 3.43$ ;  $SD = 2.28$ ). The same results were found comparing male ( $M = 3.28$ ;  $SD = 1.81$ ) and female ( $M = 3.85$ ;  $SD = 1.60$ ) perception of somatic anxiety. The difference was 17.38% in favour of male skiers. On the contrary, the level of female self-esteem frequency ( $M = 4.85$ ;  $SD = 1.34$ ) was higher (3.3%) in male skiers ( $M = 4.69$ ;  $SD = 1.88$ ).

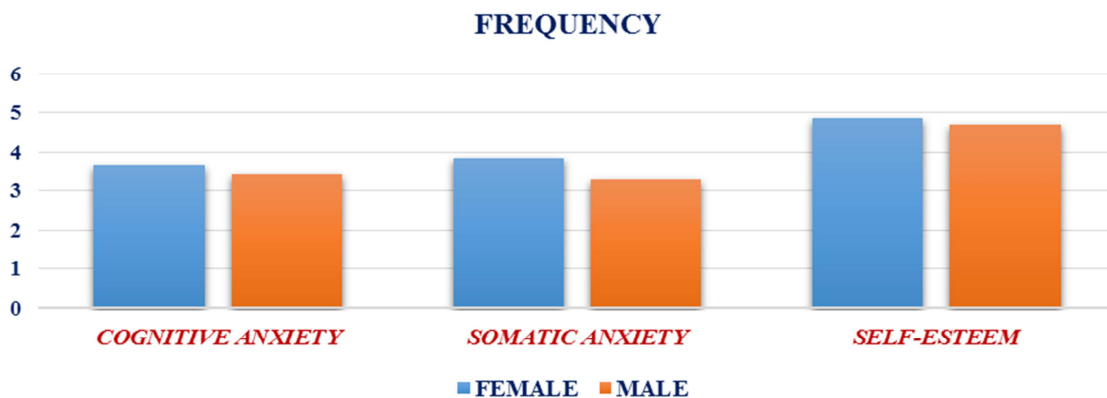


Figure 5. Gender differences in the frequency of somatic anxiety, cognitive anxiety and self-esteem

The most interesting results were found in analysing of anxiety and self-esteem direction (see Figure 6.). Female skiers experienced the intrusions of cognitive ( $M = 0.2$ ;  $SD = 1.68$ ) and somatic anxiety ( $M = 0.61$ ;  $SD = 1.33$ ) as negative regarding upcoming performance. Male skiers perceived the intrusions of cognitive ( $M = -0.73$ ;  $SD = 1.74$ ) and somatic anxiety ( $M = -0.72$ ;  $SD = 1.65$ ) more positively than female skiers. The difference was 97.33% for cognitive and 154.13% for somatic anxiety. Even though, female skiers perceived intrusions of self-esteem ( $M = -0.61$ ;  $SD = 1.32$ ) as positive like male skiers ( $M = -1.21$ ;  $SD = 1.53$ ), the intersexual difference in favour of male skiers was also obvious in this monitored component (49.59%).

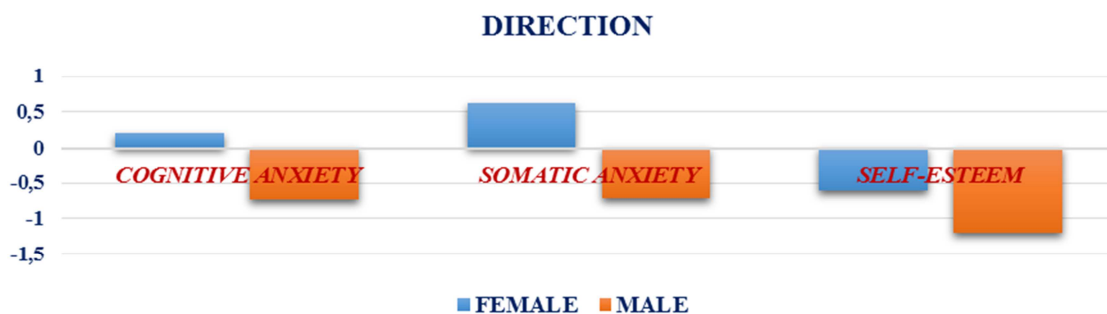


Figure 6. Gender differences in the direction of somatic anxiety, cognitive anxiety and self-esteem

## DISCUSSION

Our findings suggest that female skiers experienced higher level of somatic and cognitive anxiety than male skiers. Similar results were found in other research studies where female athletes experienced higher cognitive anxiety levels than their male counterparts [11, 7, 14]. Moreover, female skiers also experienced lower level of self-esteem than male skiers which corresponds with findings of other research studies applied in various individual and collective sports [12, 7, 14, 2, 11]. Considering our results that corresponds with the above-mentioned research studies, it seems that female skiers have tendency to experienced more anxiety and lower self-esteem prior to start than male skiers. Other interesting finding showed that downhill skiers perceived higher level of somatic and cognitive anxiety in first round than in final one. Furthermore, it was also reflected in higher self-esteem in the final round in both male and female skiers. Unfortunately, there is lack of research to compare with that covers this issue. Finally, male and female skiers perceived higher level of somatic anxiety intensity than cognitive one. It is interesting that out of the two forms of anxiety; somatic anxiety has the stronger relationship with self-confidence. These results suggest an athletes' self-confidence, or belief in their ability, is more greatly affected by how they feel physically as compared to how they feel mentally [1].

## CONCLUSIONS

Based on the results analysis we can conclude that skiers perceived higher level of intensity and frequency of cognitive and somatic anxiety prior to start in the first round comparing to the final one. Moreover, the level of intensity and frequency of specific anxiety components were on adequate level that was reflected on relatively high level of self-esteem. It was also visible on skiers' positive perception of anxiety and self-esteem intrusions considering the upcoming performance. Intersexual differences revealed higher level of somatic and cognitive anxiety of female skiers. Nevertheless, within self-esteem component, female skiers perceived the higher level of intensity and frequency than male skiers. The most important intersexual differences were found in the direction component. Male skiers perceived intrusions of anxiety as well as self-esteem more positively than female skiers. Finally, male and female skiers perceived higher level of somatic anxiety intensity than cognitive one. It is very important to note that diagnostics and effective regulation of pre-competitive states that can influence the performance in downhill skiing should play important role in psychological interventions in skiers training process.

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