

The Effect of Pre-Competition Anxiety Levels of Elite Artistic Gymnasts on Competition Performances

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Abstract--- The aim of the study is to investigate the effect of pre-competition anxiety levels of Turkish National Team athletes competing in the Tokyo Olympic Games in 2021 on their competitive performance. A total of 5 Turkish National Team gymnasts, 4 men and 1 woman, who competed in the artistic gymnastics branch in the 32nd Summer Olympic Games (2021, Tokyo / JAPAN) participated in this study. In this study, which was planned as a qualitative research, the data were obtained by applying the interview and observation technique. During the interview, questions were asked to the gymnasts to evaluate their performance and anxiety. After the Olympics, the video recordings of the competition routines of the artistic gymnasts were watched together with the gymnasts and their trainers, their performance errors, their thoughts about their pre-competition performances and their anxiety levels in the pre-competition interview were evaluated. With the Training Information Form, information was obtained about the history and physical profiles of the gymnasts. SPSS 23.0 program (SPSS Inc., Chicago, IL) was used for descriptive statistical analyses. Anxiety was summarized after the information obtained through the interview with the participants was organized and coded. Then competition performance were examined. It was recorded in which movements the gymnasts made mistakes. The obtained interview data were matched with the findings of the video recordings, and the anxiety states of the gymnasts and the mistakes they made during the competition were evaluated.

Keywords--- Artistic Gymnastics, Anxiety, Performance.

I. Introduction

Anxiety is defined as the feeling of tension, which usually arises with the thought that something bad will happen, and whose cause is unknown (1). Anxiety, which is experienced by almost all people and whose main purpose is to sustain life and to ensure the development of adaptive behavior, is a necessary emotion for the continuation of human life. However, this feeling, which is healthy up to a point, affects the daily life, interpersonal relations, social and work life of the person negatively if it is experienced above a certain level and for a certain period of time (2). Anxiety reactions occur when psychological and social burdens are encountered (3). Among the strong reasons that cause anxiety are fear of failure, loss of prestige and arrogance (4).

In the competitive environment of sports competitions, bad thoughts such as failure or negative criticism from others stem from lack of confidence and inexperience. Athletes are afraid of being worthless to those they care about. Athletes, their performance during the competition; They think about how they will be judged by the coach, teammates and rivals, and they fear losing their respect. For this reason, the way of perception and the level of perception are very important in experiencing anxiety (5). One of the personal reasons that triggers high anxiety is to focus more on the outcome of the competition than the competition itself. Regardless of whether the result is positive (success) or negative (defeat), the athlete's excessive focus on results creates unnecessary pressure on the athlete and prevents him from focusing on the competition in a way that he will perform optimally (6). Focusing on the result before the competition can create pressure in athletes.

In the 1950s, state anxiety was first suggested by the factor analysis studies of Cattell and Scheier in order to distinguish between characteristic and situational anxiety, and then formed the essence of the Two-Factor Anxiety Theory developed as a result of the studies of Spielberger et al. (7). According to Spielberger, state anxiety is like kinetic energy, or the immediate reaction that occurs at various levels of intensity. State anxiety is the subjective fear that an individual feels due to the stressful situation he is in (8). When the stress is intense, the level of state anxiety increases, and when the stress disappears, it decreases (9).

How the athlete responds to threatening situations with state anxiety depends on the athlete's perception of these situations. Athletes may perceive the situations they are in differently, and therefore they may respond with different state anxiety. Athletes should develop personal approaches suitable for their own needs. Trainers, technical directors and physical education teachers should know that the athletes do not perceive the situations they encounter as they do, and how the athlete perceives the situation can determine the level of anxiety (10). It is not possible to be completely carefree and passive in sportive competitions. Because there is anxiety in the nature of the competitions

and the dynamism of the sports. Findings such as heart rate per minute, muscle tension, and irritability, which show the height of bodily anxiety, increase performance to a certain extent, and then cause performance loss at further levels.

Many athletes face pressure and difficulty in competitions. These pressures and difficulties cause the athletes to experience anxiety and stress, especially in competitions. Many athletes are not able to show their performance in training under pressured and stressful competition conditions. The presence of external rewards and penalties, the uncertainty of the result, the strength of the opponent, the results of the team or individuals in the last matches affect the athletes in every competition situation and especially in professional sports performed at high level. The extent to which the result is seen as important for the athletes and how the athletes perceive their physical, technical, tactical and psychological capacities in relation to the opponent they encounter determine the state of anxiety or stress (11). Studies on the reasons why the athletes, who were determined to have equal abilities with different motor tests, showed different success in sportive actions, united scientists on the view that "the difference in the psychological structure of the athletes" is one of the reasons determining this success difference. According to the sport and activity, it is very important to achieve optimal arousal in performing well (7).

Artistic gymnastics is one of the main sports branches with its history dating back to the first modern Olympic games. The success that our country has achieved in the world, especially in recent years, shows that the athletes go through a correct and disciplined training process. However, it is observed that athletes who train physically make unexpected mistakes in competitions. The high anxiety seen in athletes in competitions is a disadvantage for performance. It is thought that the level and intensity of anxiety, not the presence or absence of anxiety, is important in determining the sportive performance. It is very important for athletes and coaches to know their anxiety levels and the causes of anxiety and to cope with it. For this reason, the aim of the study is to investigate the effect of pre-competition anxiety levels of Turkish National Team athletes competing in the Tokyo Olympic Games in 2021 on their competitive performance.

II. Methods

Participants

A total of 5 Turkish National Team gymnasts, 4 men and 1 woman, who competed in the artistic gymnastics branch in the 32nd Summer Olympic Games (2021, Tokyo / JAPAN) participated in this study. Gymnasts 1, 2, 3 and 4 are numbered as male, and gymnast number 5 as female gymnast.

Procedure

In this study, which was planned as a qualitative research, the data were obtained by applying the interview and observation technique. The data collection technique in which the participants in the research sample actively explain their knowledge, feelings and thoughts about the research topic and tell their life story is called interview. The purpose of the interview is to reach the inner worlds of the participants and determine their unique perspectives. Interviewing provides access to unobservable information such as the experiences, different experiences, attitudes, thoughts, intentions, comments, mental perceptions and reactions of the individual about the researched subject (12, 13).

During the interview, questions were asked to the gymnasts to evaluate their performance and anxiety. In this framework, the artistic gymnasts' thoughts on anxiety levels and competition performances were obtained by interview method before the 32nd Summer Olympic Games (Tokyo - JAPAN).

The data collection tools of the research were prepared by the researcher; These are questions to determine the descriptive information, anxiety and performance levels of gymnasts. Each participant was evaluated according to their own knowledge.

Questions about anxiety;

1. Could you tell us about the emotion you felt most dominant in the competition?.
2. Do you feel anxious, hectic or restless before the competition?.
3. How does the thought of failure affect you?.
4. How do the attitudes of the trainer affect you before the competition or during the warm-up?.
5. How do the executive attitudes affect you before the competition?.
6. Do you feel calm before starting the competition? What worries you most about the competition?.
7. Does the thought of making faults while competing excite you?.
8. Do you experience physiological changes such as a quickening heart rate or your hands sweating more than usual before competing?.
9. Do you feel different compared to other apparatuses when competing with apparatuses that you think you are better at?.

Questions about performance;

1. In which movements are you likely to make faults on floor exercise apparatus?.

2. In which movements are you likely to make faults on vault apparatus?.
3. In which movements are you likely to make faults on horizontal bar apparatus?? (for male gymnasts).
4. In which movements are you likely to make faults on rings apparatus? (for male gymnasts).
5. In which movements are you likely to make faults on parallel bars apparatus? (for male gymnasts).
6. In which movements are you likely to make faults on pommel horse apparatus? (for male gymnasts).
7. In which movements are you likely to make faults on uneven bars apparatus? (for female gymnasts).
8. In which movements are you likely to make faults on balance beam apparatus? (for female gymnasts).
9. Can you rank from the apparatus you thought you were the best in terms of performance to the apparatus you thought you were the weakest?.

Descriptive questions;

1. How old are you?.
2. How tall are you?.
3. What is your body weight?.
4. How long is your weekly training period?.
5. How many years have you been doing gymnastics?.

After the Olympics, the video recordings of the competition routines of the artistic gymnasts were watched together with the gymnasts and their trainers, their performance faults, their thoughts about their pre-competition performances and their anxiety levels in the pre-competition interview were evaluated. Case study was determined as the research type.

Statistical Analysis

Descriptive statistical analyzes were performed to determine the mean \pm standard deviation values of gymnasts' age, gender, height, body weight, athlete's background, training times. SPSS 23.0 program (SPSS Inc., Chicago, IL) was used for descriptive statistical analyses. Anxiety was summarized after the information obtained through the interview with the participants was organized and coded. Then competition performance were examined. It was recorded in which movements the gymnasts made mistakes. The obtained interview data were matched with the findings of the video recordings, and the anxiety states of the gymnasts and the mistakes they made during the competition were evaluated.

III. Results

The descriptive statistical analysis of elite artistic gymnasts is shown in Table 1.

Table 1: Descriptive Statistics of All Gymnasts

(N= 5)	\bar{x} and SD	Min Value	Max Value
Age of years	23.80 \pm 3.90	18.00	28.00
Body Weight (kg)	66.20 \pm 2.95	62.00	70.00
Height (cm)	167.00 \pm 7.52	160.00	178.00
Sports Background (years)	17.40 \pm 2.61	14.00	21.00
Weekly Training Time (hours)	30.00 \pm 0.00	30.00	30.00

N; Number of routines, \bar{x} , and SD; Mean \pm Standard Deviation, **Min Value**; Minimum Value, **Max Value**; Maximum Value.

As a result of the interview, 6 main topics related to anxiety in elite artistic gymnasts were determined. They were "Excitement-Worry-Confidence", "Physiological Changes", "Performance", "Failure", "Trainer Attitudes" and "Executive Attitudes".

"Excitement-Worry-Confidence"

The gymnasts mentioned that they had feelings such as excitement, worry and self-confidence in their answers to the questions about anxiety before the competition. The number 1 gymnast expressed his excitement and worry with the following sentence; "I am where I want to be in my career. My excitement is at the optimum level, I am ready for performance, so I am not fussy at all", and the number 3 gymnast answered the question, "I am excited. But this excitement does not affect me negatively. I try to stay calm and I want to show myself in this arena". Gymnast number 5 said, "I'm excited and worried. Because it's the Olympics and a huge competition that I'm going to meet for the first time. I also feel extra anxiety in terms of performance as we are going through the pandemic period. Frankly, I am worried about the injury in my foot." The gymnasts number 2 and 4 stated that they were confident in themselves and that they could control their negative emotions.

"Physiological Changes"

Another topic related to anxiety was about "Physiological Changes", such as the acceleration of the heart rate and sweating of the hands, that occurred before the start of the routines in the competition. Gymnasts number 1, 4

and 5 emphasized that their heart rate accelerated and their hands were sweaty. However, all of them reported that they were able to keep this situation under control. The number 3 gymnast differs from the others in the physiological change in his body: *"My hands and feet are colder than normal. That's why I use gloves and shoes until it's my turn to compete. Also, my heart rate increases."* replied with his statement. The number 2 gymnast stated that there was no change.

"Performance"

It was evaluated how they felt before competing in the apparatuses that they were better or weaker than themselves. As a result of this evaluation, it has been determined that gymnasts are safer when competing in apparatus that they are good at. Gymnast 1: *"Yes, I feel different. I feel more confident with the apparatuses I'm good at. I'm a little nervous about the apparatuses. I'm weak on."*, Gymnast 2: *"Yes. I have higher self-confidence in the apparatus I trust. I feel different. But it doesn't reflect negatively on the apparatus I don't trust."*, Gymnast 3: *"Yes, I feel different. When I do my pre-routines (eg arm swing preparation movement) on a apparatus I trust, when I go to a apparatus I don't trust. I don't."* The other two gymnasts, differing from the above statements, Gymnast 4: *"I can't be as comfortable as with the weaker apparatus before I compete on a good apparatus. I get excited. I think to do it without mistakes. But I only think of completing the routines on the weaker apparatuses."* Gymnast 5: *"Because I feel that I have more responsibility compared to other apparatus, I have more excitement and anxiety in the apparatus that I am good at"*. It was concluded that three gymnasts were less excited and anxious in the apparatus that they were good at, while the other two gymnasts, unlike these results, had a higher level of excitement is thought to be.

"Failure"

The gymnasts expressed their thoughts about the feeling of failure with the following expressions.

Gymnast 1: *"I never had that thought in my head. I have a goal. I will try to do my best."*

Gymnast 2: *"This is a feeling that I have erased from my mind. Failure is something to be embraced. The lessons I learned from my failures lead me to success. The mistakes I made at the 2016 Olympics were my strongest motivation for 2021. I never think of failure."*

Gymnast 3: *"I never think about the feeling of failing. I focus on good thoughts as much as possible. The reason I don't feel like a failure is because I know that even if I fail, they will continue to support me. Because I know that failure is an experience that leads me to success."*

Gymnast 4: *"It is important to know yourself. Of course, this feeling is normal. I turn this feeling into a positive one."*

Gymnast 5: *"Failure does not affect me negatively because I actually learn from my failures."*

"Trainer Attitudes"



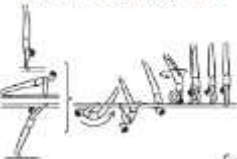

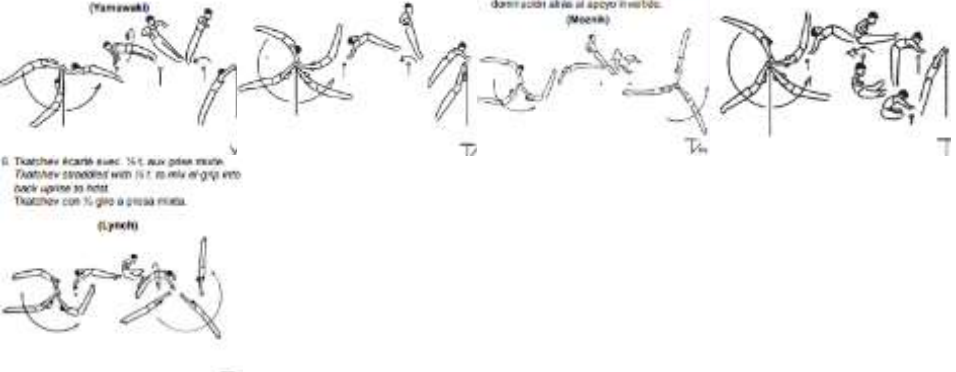
The effect of trainer behaviors and attitudes on gymnasts before the competition was considered as another main topic. Regarding this question, four gymnasts gave similar answers, emphasizing that they were negatively affected by the trainer's negative attitudes. Among the answers given; *"Negative words and behaviors affect negatively."*, *"I want my trainer to feel his excitement inside. His panic situation makes me nervous."*, *"Trainer's attitude is very important. We will compete together. If the trainer has negative thoughts, I am negatively affected. I talk to my trainer to solve this."*, *"The trainer is very important. He has to trust the athlete. If I want to warm up, I have to warm up and support me at that moment. The trainer should control his excitement. The fact that the trainer is excited affects me a lot. It also makes me nervous."* expressed the excited attitude of trainers such as. Apart from that, only the number 2 gymnast *"It affects positive attitudes positively. It does not affect negative attitudes."* He said that he was not affected by negative trainer attitudes in any way.

"Executive Attitudes"

As a subject related to anxiety, *"Executive Attitudes"* were discussed. In this sense, all gymnasts emphasized during the interview that they do not feel any negative pressure from the executives. However, again, all the participants said about the executives, *"Their excitement is also reflected in me. They should be calm."*, *"I am not affected in any way. But the executives are very excited, they need support."*, *"I do not feel any negative pressure"*, *"No negativity or negative pressure." I don't feel it, but they are very excited"*, it is thought that the executives may unintentionally create a negative effect on the performance of the gymnasts during the competition process.

Tables 2, 3 and 4 show the answers given by the elite male gymnasts to the performance questions asked about the difficulty movements in which they are more likely to make faults in the routines before the competition.

Table 2: Difficulty Elements that Gymnast 1. Thinks are More Likely to Make Faults in his Routines

Routines	Gymnast 1
Floor Exercise	<p>20. Saut à la terre avec 1/1 t. Solo feat. str. with 1/1 t. Mortal str. ext. with 1/1 g.</p> <p>21. Double saut avant groupé avec 1/2 t. Double saut fwd. tucked with 1/2 t. Double mortal salto ante grupado con 1/2 g.</p> <p>22. Saut arrière tendu avec 5/2 t. Saut arid. str. with 5/2 t. Mortal stris ant. con 5/2 g.</p> <p>23. Saut avant sur 1 jambe écartée. Aprial walkover feat. Mortal salto ante sobre con 1 pierna.</p> 
Vault	<p>179. Roche avec 1/2 tour. Roche with 1/2 turn. Roche con 1/2 giro.</p> <p>(Dragulescu)</p>  <p>5.6</p>
Rings	None
Parallel Bars	<p>07. Etablissement avant en tournant un arrière avec 1/2 ou 1 t. à l'appui renversé. Backset with 1/2 or 1 t. to handstand. Fase con 1/2 o 1 g. al apoyo invertido.</p> 
Pommel Horse	<p>55. Passé dorsal avec 1/1 t. sur 1 arçon. Kehr with 1/1 turn on 1 pommel. Pase dorsal con 1/1 g. sobre 1 arco.</p> <p>5. SDA a l'appui renversé 3/3 avec 450° ou plus. DSA to hdst. 3/3 with 450° or more turn. SDA al apoyo invertido 3/3 con 450° o más.</p> <p>(Sohn)</p> 
Horizontal Bar	<p>4. Moskovy tendu avec jambe écartées. Moskovy stretched with legs together. Moskovy extendido con piernas juntas.</p> <p>10. Tkatchev tendu. Tkatchev stretched. Tkatchev extendido.</p> <p>11. Tkatchev tendu avec 1/2 t. à prise pal-cub. alterné à l'appui renversé. Tkatchev stretched with 1/2 t. to mix argep. hts. back uprise to hold. Tkatchev extendido con 1/2 g. a presa mixta dors/auili altés al apoyo invertido.</p> <p>12. Tkatchev sur 1 pied d'appui. Swing feat. and walk fwd. stand or pedd. to hand. Impulso ad. y salto dorsal p. alt. o carp. a la sost.</p> <p>(Yamawaki)</p> <p>(Tkatchev)</p> <p>6. Tkatchev écarté avec 1/2 t. aux prises main. Tkatchev stretched with 1/2 t. to mix argep. hts. back uprise to hold. Tkatchev con 1/2 giro a presa mixta.</p> <p>(Lynch)</p> 

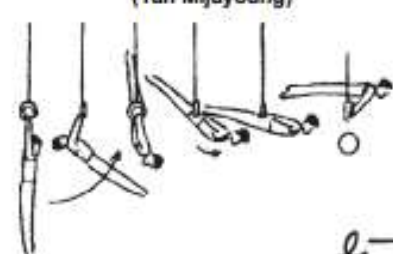
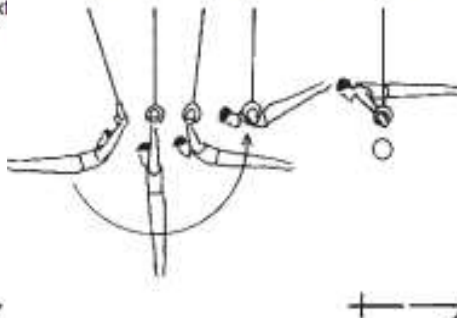
The number one gymnast declared in his response to the performance questions regarding the floor exercise before the competition that there is a high probability of making faults for the difficulty movements shown in Table 1. In the post-competition evaluation, it was determined that he did the difficulty movements exactly, but there were interruptions in execution due to unexpected small step faults due to excitement. When the gymnast's vault

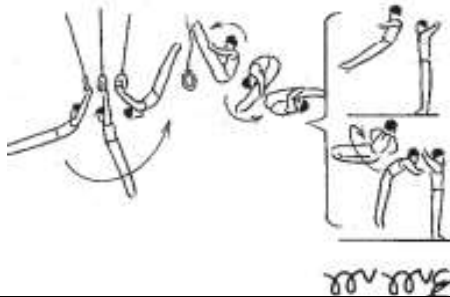
apparatus device was examined, it was determined that the biggest fault was for this device. Instead of the Dragulescu movement of 5.60, which he should have done in the competition, the gymnast unexpectedly changed during the jump and made a Roche movement of 5.20. In this case, the gymnast lost 0.40 points for his difficulty score. In the post-competition meeting, the gymnast emphasized that he could not perform the movement due to the excitement of the competition. On ring apparatus, he did not make a fault due to unexpected or excitement in accordance with his pre-competition statement. It was concluded that there was no unexpected fault in the parallel bars apparatus, and that it reflected the expected performance of the gymnast. On the pommel horse, the gymnast was performing the Sohn movement, which has a high probability of making faults before the competition, but his score was cut off by making an execution fault in the finishing movement. It was emphasized by him and his trainer that this fault was unexpected. It was determined that if the gymnast's last apparatus was the horizontal bar, he did the flying movements that she found risky before the competition as desired.

Regarding the situation titled "Excitement-Worry-Confidence" in the pre-competition statement of the number 1 gymnast; There was a statement that his excitement was at the optimum level and that he could keep it under control. Regarding his condition, titled "Physical Changes", there was also a statement that he was in control. However, in the evaluation made after the competition, it is concluded that the excitement of the gymnast negatively affects the performance of the floor exercise, pommel horse and vault apparatuses in the competition. It is thought that there are situations where the anxiety level and sense of failure are low before the competition but cannot cope with the excitement control during the competition. In addition, there was no negative effect on the level of anxiety in the attitudes of trainers and executives.

Gymnast number two stated that there is no possibility of making faults in the movements. At the end of the interview, gymnast number 2, emphasized that he was able to control her excitement, negative situations that affect his performance due to physiological changes, and that he did not have any negative thoughts such as the thought of failure. He also stated that the attitudes of the trainer or executive did not affect him positively or negatively. Consistent with these statements, the gymnast did not make any unexpected mistakes during the competition. The gymnast achieved his goal for the Olympics and won the Olympic bronze medal in the parallel bars apparatus he competed in.

Table 3: Difficulty Elements that Gymnast 3. Thinks are More Likely to Make Faults in his Routines


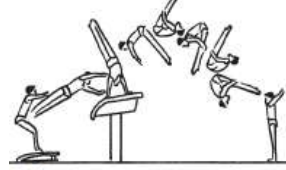
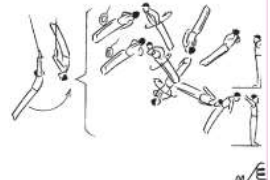
Routines	Gymnast 3
Floor Exercise	DNC
Vault	DNC
Rings	<p>101. Tour en arrière lent. corps et bras tendus à l'appui facial horizontal (2 s.). Roll bwd. slowly with str. arms and body to free sup. scale (2 s.). Voltéar. atrás lentamente cuerpo y brazos ext al apoyo facial horizontal (2 s.). (Yan Mijayoung)</p>  <p>10. Établissement. en arrière à l'appui facial horizontal (2 s.). Uprise bwd. to support scale (2 s.). Dominación atrás al apoyo facial horiz. (2 s.).</p> 

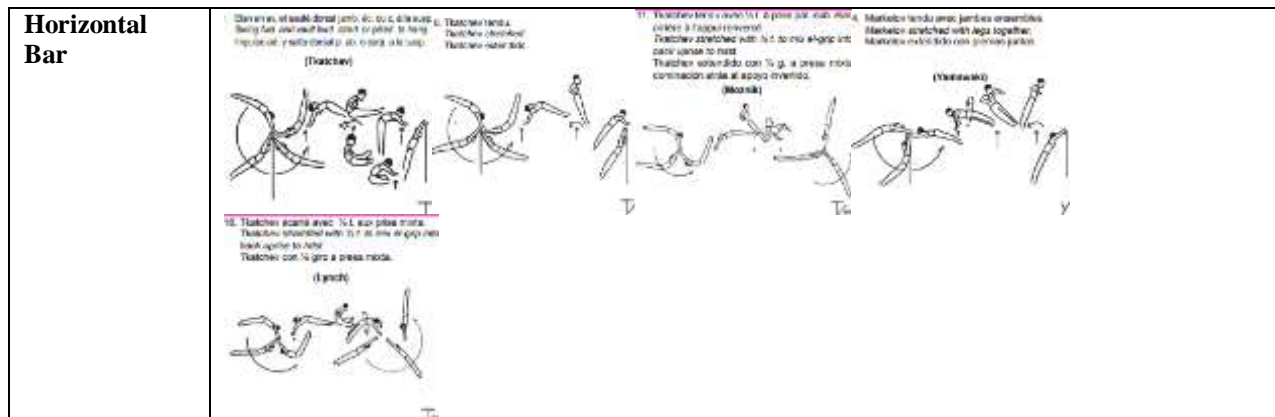
	<p>16. Double salto av. carpé ou carpé avec $\frac{1}{2}$ t. Double salto fwd. piked or piked with $\frac{1}{2}$ t. Doble mortal adelante en carpa con $\frac{1}{2}$ g. (Balabanov)</p> 
Parallel Bars	DNC
Pommel Horse	DNC
Horizontal Bar	DNC

DNC; Did not compete.

Gymnast number three competed only on the ring apparatus. During the competition, he applied the movements that he had stated in the pre-competition interview, where the probability of making faults is high, without any problems. However, it has been determined that the execution interruptions are high. It has been observed that the pre-competition statements of the gymnast regarding excitement, anxiety, failure, physiological changes, and the attitudes of the trainer or executive are compatible with the competition performance. However, in the interview after the competition, he said that he could not reach his goal regarding the competition. This situation makes us think of the gymnast's conditional inadequacy, which is one of the many components that affect performance.

Table 4: Difficulty Elements that Gymnast 4. Thinks are More Likely to Make Faults in his Routines

Routines	Gymnast 4
Floor Exercise	<p>20. Salto avant tendu. Salto fwd. stretched Mortal adelante extendido</p> <p>30. Double salto avant carpé avec $\frac{1}{2}$ t. Double salto fwd. piked with $\frac{1}{2}$ t. Doble mortal adelante en carpa con $\frac{1}{2}$ g.</p> <p>29. Salto av. tendu avec $\frac{1}{2}$ t. Salto fwd. str. with $\frac{1}{2}$ t. Mortal ad. ext. con $\frac{1}{2}$ g.</p> <p>23. Double salto avant carpé. Double salto fwd. piked. Doble mortal adelante en carpa.</p> 
Vault	<p>206. Tsukahara avec salto arrière carpé. Tsukahara with salto bwd. piked. Tsukahara con mortal atrás en carpa. (Lu Yu Fu)</p>  <p>5.6</p>
Rings	<p>48. Double salto arrière tendu avec $\frac{3}{2}$ ou $2\frac{1}{2}$ t. Double salto bwd. stretched with $\frac{3}{2}$ or $2\frac{1}{2}$ t. Doble mortal extendido con $\frac{3}{2}$ o $2\frac{1}{2}$ g.</p> 
Parallel Bars	DNC
Pommel Horse	DNC



DNC; Did not compete.

The number four gymnast performed the movements that he thought had a high probability of making faults in the floor exercise without any problems during the competition. However, his vault apparatus dropped at the finish, resulting in a large cut in his score. It was determined that this drop was an unexpected performance error due to excitement. The gymnast, who said that there may be a risk of fault on the ring apparatus, did not make any faults in this apparatus. On the horizontal bar apparatus, on the other hand, he performed the flight movements that he declared in Table 4, but it was determined that there were execution interruptions. When the views of the gymnast on excitement, anxiety, self-confidence, failure, physical changes, performance, trainer or executive attitudes are evaluated before the competition, it can be said that the gymnast's performance-anxiety relationship is at a normal level except for a device (vault apparatus). The pre-contest statements are in line with the competition performance.

The answers given by the elite female gymnast to the performance questions regarding the difficulty movements where the probability of making faults on the apparatus before the competition is high are shown in Table 5.

Table 5: Difficulty Elements that Gymnast Thinks are More Likely to Make Faults in her Routines


Routines	Gymnast 5
Floor Exercise	None
Vault	None
Balance Beam	None
Uneven Bars	<p>6.408</p> <p>Swing bwd to double salto fwd tucked</p> 

Table 5 shows a movement in which the female gymnast has a high probability of making a fault only on the uneven bars apparatus before the competition. In the post-competition performance analysis, it was determined that unexpected step faults in the floor exercise and step faults on the vault apparatus were performed, and that she performed a movement with a lower difficulty value than the movement he should have made. It is seen that the gymnast fell during the pivot movement on the balance beam and made a lot of execution faults. In addition, the gymnast fell in the finishing movement, which she saw as the only risky. It is seen that the gymnast made many unexpected faults, including the finishing movement (uneven bars), which she thought had a high probability of making a fault she declared before the competition. However, the fact that the gymnast is competing in the Olympics for the first time is among her pre-competition statements that she was worried about due to injury and the pandemic process. For the gymnast, it is clearly seen that the level of anxiety has a negative effect on her performance. Apart from this, it is seen that the anxiety and performance statements of the gymnast before the competition do not coincide with the situation in the competition performance.

IV. Discussion

In this study, the anxiety and performance of 5 elite artistic gymnasts who train for an average of 30 hours a week and have been doing artistic gymnastics for an average of 17.40 ± 2.61 years were investigated. Movements with a high probability of making mistakes during the competition were determined for each instrument, and 6 basic topics were determined in line with the answers to the questions about anxiety. These are "*excitement-worry-confidence*", "*performance*", "*physiological changes*", "*failure*", "*trainer attitudes*" and "*executive attitudes*".

1. Excitement-Worry-Confidence

Four male gymnasts are under this title, for example; He used expressions such as "*My excitement is at the optimum level, I am ready for performance, so I am not fussy at all*" "*I am excited, but this excitement never affects me negatively*". Only the female gymnast expressed her anxiety. However, when the performance and anxiety evaluation is made after the competition, it is seen that only two gymnasts (the male gymnast number three stated that he can control his excitement and is not anxious, while the female gymnast number 5 stated that she is very worried) coincides with the performance of the pre-competition anxiety. It was determined that gymnast number 3 achieved the desired performance by controlling his excitement during the competition, while gymnast number 5 made extra unexpected faults due to excessive excitement and anxiety. The fact that the number three male gymnast has a previous Olympic experience suggests that it has a positive effect in terms of controlling his emotions. Although other gymnasts said that they could control their excitement before the competition, they made many performance faults due to excitement and anxiety.

Today, sportive performance is defined as the physiological, biomechanical and psychological efficiency of the athlete during the activity (14). Various methods have been developed for the development of these components. Bompa (1997) emphasizes the types of training under 4 main headings: conditioning, technique-tactics and mental (15). However, in the trainings, conditioning, technical and tactical training are generally emphasized (16). Physical competence is very important but not sufficient for success. For a superior performance, it is necessary to develop both physiological and psychological abilities of the athlete and raise them to a certain level in accordance with the purpose (14).

In this study, it is thought that the artistic gymnasts competing in the Olympic Games are at a certain level physically. However, it gives rise to the idea that situations such as not being able to control the excitement or not being able to focus enough during the competition cause the gymnasts to make unexpected faults. In addition, the female gymnast participating in the study emphasized that, according to the information she gave before the competition, she was in the process of disability and this situation increased her anxiety level. In a study, it is stated that the athletes who suffered injuries before the 1992 Winter Olympic Games continue to be worried about whether they can regain their previous performance despite being well trained (17). This study (17) is consistent with the female gymnast's statement regarding injury. This can be explained by the fact that the athletes who experience emotional changes cannot achieve the expected success despite being physically ready (18, 19, 20). With the help of mental training programs of athletes, they can achieve success in subjects such as controlling their emotions and thoughts, self-confidence, motivation, coping with stress and learning skills (21).

2. Performance

The gymnasts stated that their routines were at different levels in terms of performance. 1st, 2nd and 3rd male gymnasts said they had higher self-confidence in the apparatus they were good at. Male gymnast number 4 and female gymnast number 5 stated that they were more anxious because they felt more responsibility on the apparatus they were good at. When the performance results of this study were evaluated, it was found that the gymnasts also made unexpected mistakes on the apparatuses they thought to be good or less good. The fact that the gymnasts, who stated that they were not anxious before the competition, experienced intense stress-induced excitement may have increased their anxiety levels.

Optimal anxiety is required in order to achieve the desired performance in athletes. Anxiety above and below optimal anxiety can negatively affect performance. A high level of anxiety is "starting rush", and low anxiety is "starting laziness". In the rush to start, the muscle tone rises and the smoothness and coordination of the movements are disturbed. In the case of starting laziness, muscle tone decreases. There is laziness and reluctance in movements, even a tendency to quit competing may occur in athletes (19).

When the relationship between anxiety and performance was evaluated in this study, while it was thought that the anxiety levels of the gymnasts were at the optimal level in the pre-competition interview, unexpected negative results were observed in some competition performances. It is thought that the Olympic Games, which is the largest sports organization in the world, are an environment where all gymnasts meet for the first time (except for a gymnast), which causes an increase in the excitement of gymnasts. Sports competitions cause constant anxiety in athletes. There is a relationship between the level of anxiety and sportive success, and independent variables such as whether the athletes are male or female, experienced and inexperienced are effective in the anxiety level (11). Simon

and Martens (1979) found the state anxiety level to be higher in individual sports such as gymnastics and wrestling than in team sports (22).

3. Physiological Changes, Failure, Trainer and Executive Attitudes

It was found that the physiological changes (increased heart rate, sweaty hands, etc.) and thoughts about the feeling of failure of all gymnasts participating in this study did not adversely affect their performance. However, it is thought that the fact that the attitudes of the trainers and executives do not put pressure on the gymnasts in this competition helps to eliminate the negative effects of the thoughts of failure.

Increasing motivation (setting purpose, supporting), controlling physiological responses (relaxing, energizing, automating skills), controlling mental responses (arousal, attention, inability to think) and performing under stress (pre-competition preparation, performance in critical moments, mental recovery) (23) is among the mental requirements that athletes must acquire. However, the attitudes of coaches and executives, which are among the factors affecting the psychological state of the athletes, also play a dominant role.

When the personality traits of the trainers are examined, it is seen that the trainers with personality traits such as honesty, morality, knowledge, maturity, mission and vision have a share in affecting team players and increasing their performance. Onag et al. (2013) they concluded that in addition to the characteristics of the trainers, elements such as club structure, athletes, technical team, facilities, fans and the press have an impact on success (24). The results are in line with this study.

V. Conclusion

In this study, it was found that stress that cannot be controlled during the competition increases the level of anxiety and causes excitement-induced performance faults. These faults had a negative impact on obtaining better scores and success rankings. There are many components that affect performance. The balance to be established between the performance components is important for the performance increase of the athletes and the achievement of the targeted success. For better results, more emphasis can be placed on mental training from the early stages of physical preparation so that gymnasts can automatically demonstrate high performance in stressful situations such as competition. It is recommended to include neuro feedback training within the mental preparation training subunits in annual training programmes.

VI. Limitations

Only gymnasts competing in the gymnastics branch of the Turkish National Team in the 32nd Olympic Games participated in this study. Research involving many gymnasts and groups can guide the preparations of athletes and trainers.

Conflict of Interest

The authors confirm that this article's content has no conflicts of interest.

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