Original Article

Impact of using some of mental strategies on the psychological hesitation and effectiveness of tactical activity of juniors' kumite

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Abstract:

This study aims to identify the impact of using some of the mental strategies such as thinking about skillful duty and positive self-talk, which are used to develop the psychological skills such as the ability to relax, mental imagery, and concentration of attention, on the degree of psychological hesitation, and the effectiveness of tactical activity of the juniors kumite under the age of 16. The researcher has used the experimental methodology on a sample that consisted of (12) juniors kumite. In addition, number of tools has been used such as psychological tests, the measurement of effectiveness of tactical activity of the juniors kumite, and the program of mental strategies. The most important results refer to that the mental strategies such as thinking about skillful duty and positive self-talk, help in developing the psychological skills such as the ability to relax, mental imagery, and concentration of attention. As well as, these strategies contribute to decreasing the state of psychological hesitation, and increasing the effectiveness of tactical activity of the juniors kumite under the age of 16.

Key words: mental strategies - psychological hesitation - the effectiveness of tactical activity.

Introduction

Physical Activity (PA) is generally defined as any bodily movement produced as a result of muscle Flush Sports excellence depends on how the athletes get benefit from their psychological characteristics, as well as the technical and physical abilities. The psychological skills help the athletes to mobilize their physical abilities, in order to achieve the best sports performance. The psychological training programs could be used to develop these skills. Since the successful sports performance results from the physical and mental power, excellence in the sports competitions depends on how the athlete gets benefit from his mental abilities besides physical abilities.(EL Hussein, 1999)

Shimon (2001) has referred to the importance of integration between mind and body. This integration is the only way for discovering the real abilities. Therefore, the use of mental preparation and strategies, as well as the development of psychological skills play an important role in achieving the real abilities. And those mental strategies should be side by side with the physical and technical training programs, which help the athlete to gain self-confidence and the ability for making-decision. Mental strategies are considered one of the important cognitive dimensions, which help in achieving the advanced level of sports accomplishment through isolating the anxiety and overcoming the stresses. Training on these strategies gives a sense of security, and decrease the sense of apprehension. In addition, on the level of skillful aspect, this training helps in decreasing the technical errors during the motor performance.(Said ,2009).

There are various mental strategies that are used in sports field such as thinking about skillful duty, positive self-talk, temperamental words, and division of performance. It is necessary to select and combine between the appropriate strategies, and taking into account the sufficient resilience to deal with the sports activity requirements, as well as the mental abilities of the opponent.(Annan,1995 ; Shimon, 2000)

The strategy of thinking about skillful duty depends on the preparation of thinking content, in order to concentrate on the technical aspects such as the exerted force and the accuracy of orientation. Many of sports psychologists have referred to the effectiveness of using the strategy of thinking about skillful duty for developing the level of motor performance, as well as softening the intensity of anxiety and tension in the competition. (Meichnboum & Turk , 1997).

The strategy of positive self-talk is regarded as a key factor for cognitive control. It is necessary to know how the mind works, how to control and use it effectively, and how self-talk affect the feelings, ideas and actions. The use of mind could be positive when it helps to increase self-esteem, while it could be devastating when the athlete talks to himself in a negative way. (Morris & Summers 1995).

Psychological hesitation is considered one of the psychological states that contribute to decreasing the level of skillful performance and tactical activity; in addition it leads to the failure in achieving the desired level during the sports competitions. It is noticeable that psychological hesitation doesn't accompany the athlete at all

times, but it appears during the difficult competitive situations, like Kumite competitions, which require determination and ability to make decisions quickly. Psychological hesitation is one of the psychological emotions that must be studied and analyzed, in order to clarify its concept for the researchers, and select the guaranteed means that would be able to deal with it. (EL-Taleb & Louis 2000).

EL-Taleb. & Louis (1993) have referred to that there are many influential psychological factors such as anxiety, tension, thinking under difficult psychological stresses, introversion, the level and importance of competition, and the lack of self-confidence, which eventually lead to the state of psychological hesitation.

Psychological hesitation, during the competition, is a state of neuromuscular compatibility disorder. As a result of this hesitation, the process of harmony between relaxation and contraction loses its serialization and succession, which leads to constrict the extent of motion and decrease the normal kinetic flow. The importance of problem expands when it affects the mind, which leads to focus on the body instead of visual information, so the visual field decreases. Consequently, the information that reaches the mind decreases, and the response becomes limited according to the input information. Concealing a lot of information before sending out the decisions that related to the motor duty, leads to the weakness in performance. (Shimon & Ismael 2001)

Karate sport is one of the competitive activities with changeable situations, as well as it is considered one of the combat sports that require mental abilities and psychological features. These abilities and features enable the player to execute all the necessary technical movements such as strikes and kicks under different circumstances. (Ibrahim 1995). Kumite is combat competitions between two players have the same degree (belt level), weight, and age. Each player try to defend and attack at the same time, by using upper and lower limbs to hit the areas of body that are licensed to attack inside the framework of Karate's laws. (Ibrahim, 1995 ; Ferrie, 1996 ; Shmandi, 2002). Ibrahim (2005) has referred to that the tactical activity has a special importance in the competitions. This activity depends on the fight between two equivalent players, each of them try to defend and attack the other in order to score more points. Thus, the player would be able to win the competition by using his tactical abilities effectively.

In this respect, the researcher refers to that the psychological aspect is the least prepared in the Karate field, due to the lack of specialist psychologists on the level of teams and national teams. Therefore, the researcher seeks to set a group of suggested mental strategies and psychological abilities in order to enable the players to reach the mental and psychological state that would help them to achieve the best performance.

According to the researcher's scientific and practical experience (as a Karate player and coach), and according to the observations about Kumite championships, the researcher has found that the process of learning and training (for the juniors kumite under the age of 16) is performed in scientific and orderly way. But unexpectedly, the players can't achieve the expected and desired level of the tactical activity during the formal competitions. The researcher has attributed that to the state of psychological hesitation that results from the coaches' carelessness in using the mental aspect in order to develop the psychological abilities. On the other hand, the coaches focus only on the physical and technical aspects, and try to get benefit from those aspects in improving the effectiveness of tactical activity during the competitions.

Therefore, the researcher has opined that it is necessary to discuss the temporary psychological state that happens to the emerging players such as psychological hesitation, lack of self-confidence, mental distraction and lack of concentration of attention. In addition, it is important to work on converting these states into positive psychological abilities, in order to enable the player to concentrate on exploiting his mental and physical ability effectively during the formal competitions. Thus, the researcher has referred to the importance of setting a suggested program with the appropriate mental strategies, in order to develop the psychological abilities and increase the effectiveness of tactical activity for juniors kumite.

The objectives: This study aims to identify

- The impact of using some of the mental strategies (thinking about skillful duty -positive self-talk), which are used to develop the psychological skills (ability to relax- mental imagery - concentration of attention), on the degree of psychological hesitation of the juniors kumite under the age of 16.
- Impact of using some of the suggested mental strategies on the effectiveness of tactical activity of the juniors' kumite under the age of 16.

Materials and Methods

The researcher has used the experimental methodology, as well as the experimental design with one group by using the pre & post measurements.

Research Sample

By using the purposive method, the researcher has selected the sample from the juniors kumite under the age of 16, who are registered at Sharkia Sports Club and Egyptian Karate Federation. The main research's sample consisted of (12) emerging players as one experimental group. The researcher has used (8) emerging players as an exploratory group (from the same research's population and outside the main sample), in order to calculate the scientific parameters of psychological tests and the scale of psychological hesitation. The researcher has found the homogeneity between the individuals of main research's sample in some variables such as age, training age, intelligence, length, weight, the effectiveness of tactical activity and psychological abilities.

Psychological Tests

Scale of Relaxation.

This scale was set at first by Frank Vital (1971) under the title of “Your ability to relax”. The Arabian model was prepared by Mohamed Hassan Alawi and Ahmed el-Swefy (1981). This Scale includes 15 phrases that allow the subject to express his ability of mental and muscular relaxation through the verbal responses to scale’s phrases. (Shimon , 1999).

Scale of Mental Strategy.

This scale was prepared by Mohamed el-Araby and Magda Ismael (1996) under the title of “Mental Imagery in Sports Field”. It aimed to identify the degree that would enable the subject to use his senses during the mental imagery. This scale included two sports situations (individual practice & the performance of competition). (Shimon , 1999).

Concentration Network Test.

This test was set at first by Dorothy Harris (1987) in order to measure the concentration of attention. The Arabian model of this test was prepared by Mohamed el-Araby (1996). It consists of a group of numbers (from 0 to 99) inside small squares. The test is introduced to the subject for one minute and he is asked to follow the numbers serially from the number that is specified by the examiner. The subject puts a slash mark on the numbers that followed this specific number, and after one minute the examiner calculates the total of marked squares. It is must to take into consideration that this specific number is consisted of two numbers (11, 12, 13, 14, etc.)

Scale of Psychological Hesitation

This scale was prepared by EL Hussein, F. H. (1999), and it includes 51 phrases. The player answers the scale according to the degree of applicability of the phrase on him. The scale is corrected in light of quintuple rating scale (totally applies to me – applies to me – sometimes applies to me – doesn’t applies to me – totally doesn’t apply to me). The higher degree refers to that the player has high degree of hesitation, while the lower degree refers to the low degree of hesitation. The researcher refers to that she has made many modifications in the scale’s phrases to fit with the research’s sample.

IQ Test

IQ test was prepared by Saleh, A. Z. (1987), it aims to classify the individuals and evaluate their mental abilities. This test is suitable for different ages and both genders.

Effectiveness of tactical activity during the kumite competitions

Due to the high speed of motor performance during the Kumite competitions (which are characterized by the continuous and fast change in the process of attack, defense and counter-attack), the researcher has recorded the competitions and presented them by using VCR.

Evaluation steps of tactical activity

1. Every player participated in (3) competitions. The main sample was divided into two groups according to weights. The first group consisted of (6) players below 57 Kgs. The second group consisted of (6) players below 62 Kgs. Time of each match was 3 minutes for both the pre & post measurements.
2. The competitions were refereed by referees who are registered at the Egyptian Karate Federation.
3. The researcher recorded the competitions and presented them later by using video cassette recorder (VCR), in order to analyze them and evaluate the effectiveness of tactical activity, as well as the form of referees’ committee.
4. Identifying the results of data dump:
 - M= number of the offensive manners that the player executed successfully.
 - N= number of the offensive manners that the player didn’t execute effectively.
 - M1= number of the opponent’s offensive manners that the player succeeded in repelling.
 - N1= number of the offensive manners that the opponent executed successfully.
 - Q= number of the competitions that the player participated in.

$$\text{Effectiveness of tactical activity} = \frac{\frac{M}{N} + \frac{M1}{N1}}{Q}$$

Suggested mental strategies

First: the objectives of mental strategies

The suggested mental strategy aims to decrease the state of psychological hesitation and increase the effectiveness of tactical activity for the Kumite emerging players, through achieving the following Developing the ability of mental and muscular relaxation, Developing the mental imagery, Developing the ability to concentrate, Controlling the emotions and directing them effectively during the competition, Developing the skills of positive self-talk.

Secondly: the axes of mental strategies

First axis: the main mental training, which includes the muscular relaxation, mental relaxation, mental imagery, and concentration of attention.

Second axis: the mental training and effectiveness of tactical activity of Kumite emerging players. This axis includes the applications of psychological skills, as well as the mental requirements to increase the effectiveness of tactical activity for Kumite emerging players.

Third axis: the mental strategies, which include the strategy of thinking about skillful duty and positive self-talk.

Thirdly: the content of mental strategies

First axis: the main mental training:

First dimension muscular relaxation

Muscular relaxation is considered one of the preparatory dimensions in the phase of main mental training. The relaxation method that was prepared by David Caius has been used in order to implement this dimension. This method includes an execution of a chain of the muscular contractions. This chain is a complete introductory relaxation that aims to discriminate between the muscular tension and stretching, in order to achieve the state of deep muscular relaxation. As well as, it is necessary to take into consideration the transition from a muscular group to another, in order to relax all the muscular groups in the body.

Second dimension mental relaxation

Mental relaxation is considered one of the preparatory dimensions in the phase of main mental training. The method of controlling in respiration has been used in order to implement this dimension, considering that the good deep respiration is the key factor for the mental relaxation and decreasing the tension. This method depends on executing a group of respiration trainings.

Third dimension mental imagery

Mental imagery is considered one of the most important dimensions, which reflects the effect of phase of mental training in the program. It is necessary to train on this mental skill before employing it in the specialized sports activity. This dimension depends on forming a primary mental image, which is used to form a clear mental image through reaching the mental room. This room reflects the comfort and serenity, and could be imagined by the Kumite player after reaching a high degree of relaxation. And then, the player imagines specific motor totalities (attack – defense – counter-attack) or some of the situations that happen during the competitions, through recalling real images that include the visual, auditory and kinesthetic sensation dimensions.

Fourth dimension: concentration of attention

Concentration of attention is one of the pillars of the phase of main mental training, which contributes effectively to achieving the training's objectives. The trainings of concentration have been used for specific motor totalities (attack – defense – counter-attack) or some of the situations that happen during the competitions. This dimension includes general concentration trainings, then attention concentration trainings.

Second axis: mental training and the effectiveness of tactical performance of the juniors kumite

Fifth dimension: the mental requirements for increasing the effectiveness of tactical activity for the juniors kumite

This dimension identifies the mental requirements, which have a significant role in increasing the effectiveness of tactical activity during the competitions. These requirements have been divided into:

❖ **The requirements of mental imagery**

- **Internal Imagery:** the Kumite player tries to imagine his movements as if there is a camera that is fixed above his head and records every movements during the match.
- **External Imagery:** the Kumite player tries to imagine himself as if he watches a movie.

❖ **The requirements of concentration**

Kumite competitions require various attention skills that should be focused on, during the competition.

Sixth Dimension: the applications of psychological skills of the juniors kumite

❖ **First: Trainings of multidimensional mental imagery**

This dimension aims to discuss the visual, auditory, emotional and kinesthetic sensation dimensions that related to the performance, and tries to develop them integrally, in order to progress the process of mental imagery.

1. Training of visual imagery

Visual imagery is a principal process for the good performance in the Kumite competitions, this process could be achieved through:

- Implementing simple mental imageries.
 - Implementing compound mental imageries.
2. Training of auditory imagery

There are times, during the competitions, that the player talks to himself or he listens to the others' voices in his mind. These voices could be useful for the player, if he can control and use them to motivate his performance. As well as, there are some of the external voices that distract his attention. Therefore, it is important to know how to control and use these voices effectively through:

- Training of external auditory imagery.
 - Training of internal auditory imagery.
3. Training of kinesthetic sensation imagery

The training of kinesthetic sensation imagery contributes effectively to increasing the tactical activity during the Kumite competitions through using the following trainings:

- The physical sensation (through examining the body, increasing and decreasing the muscle tension).
- The emotional sensation.

4. Training of imagination of emotional state

If the player encounters a bad or sad emotion during the match, it will affect his performance. So, the player needs to recall a happy situation in order to decrease the effect of this emotion.

❖ **Second: Trainings of concentration**

These trainings are the basic elements for achieving the effective performance and developing the ability of attention of concentration. The following trainings have been used by the researcher:

- Using the symbolic words (educational – incentive)
- Performing a training process in the presence of distractions.
- Setting a fixed system before and during the training process.
- Concentrating on the current performance.

Fourthly: Third axis: mental strategies

Seventh dimension: the strategy of thinking about skillful duty

Objective: focusing on the technical aspects and the requirements of good performance

Execution steps

The following trainings have been used in order to focus on the technical aspects of performance:

- Trainings that focus on the important movements (attack – defense – counter-attack).
- Trainings that focus on the motor range of four limbs.
- Trainings that focus on the amount of exerted force.
- Trainings that focus on the distances between the players.

Eighth dimension: The strategy of positive self-talk

This dimension is used for developing the skills of positive self-talk in order to increase the effectiveness of tactical activity during the Kumite competitions.

Execution steps

The following methods and trainings have been used in order to develop the positive self-talk:

- Using the phrases of positive self-talk for increasing the effectiveness of tactical activity during the Kumite competitions.
- Using the phrases of positive self-talk for decreasing the psychological hesitation that happens during the competition.
- Using the phrases of positive self-talk for correcting the wrong manners.
- Using the phrases of positive self-talk for isolating the negative thinking.
- Using the phrases of positive self-talk for converting the negative ideas into positive.

Time distribution of suggested mental strategies:

The researcher has put a time plan to execute the program within (10) weeks. The total number of training units was (30) [3 training units per week], and each unit took (25 minutes).

Pre measurements: The researcher has performed the pre measurements for the main research's sample in the

Psychological skills, Psychological hesitation and effectiveness of tactical activity.

Implementation of suggested mental strategies

The researcher has implemented the content of mental strategies on the main research's sample for continuous (10) weeks [3 training units per week, and each unit took 25 minutes]. This content has been implemented before the main part of daily training unit.

Post measurements

The researcher has performed the post measurements for the main research's sample in the psychological variables and tactical activity with the same arrangement and conditions of pre measurements.

Results

Table 1. The significance of differences between the pre and post measurements of the main research's sample in the psychological variables under discussion

N=12

Variables	Pre M ± SD	Post M ± SD	T	Percentage %
Ability to relax	35.83±4.31	40.95±3.73	3.61*	14.29
Mental imagery	61.50±5.16	68.00±4.91	3.17*	10.57
Concentration of attention	6.91±1.92	9.27±1.33	4.12*	34.15
Psychological hesitation	141.80±5.96	130.05±4.10	4.97*	8.66

*T value at 0.05 = 2.201

Table 1 Shows that there are statistically significant differences at 0.05 level between the pre and post measurements of the main research's sample in the psychological skills (Ability to relax – Mental imagery – Concentration of attention) and the degree of psychological hesitation, in favor of the post measurement and there are differences at the rate of improvement between the pre and post measurements of the main research's sample in the psychological skills (Ability to relax – Mental imagery – Concentration of attention) and the degree of psychological hesitation ranged from 8.66 to 34.15%, in favor of the post measurement.

Table 2. The significance of differences between the pre and post measurements of the main research's sample in the effectiveness of tactical activity during the Kumite competitions

N=12

Variables	Pre M ± SD	Post M ± SD	T	Percent ge %
Tactical activity	1.10±0.69	1.80±0.54	2.71*	63.64

Table 2 shows that there are statistically significant differences at 0.05 level between the pre and post measurements of the main research's sample in the effectiveness of tactical activity during the Kumite competitions, in favor of the post measurement and also there are differences at the rate of improvement between the pre and post measurements of the main research's sample in the effectiveness of tactical activity during the Kumite competitions, in favor of the post measurement with 63.64 %.

Discussion

The results of table (1) refers to that there are statistically significant differences at 0.05 level between the pre and post measurements of the main research's sample in the psychological skills (Ability to relax – Mental imagery – Concentration of attention) and the degree of psychological hesitation, in favor of the post measurement and there are differences at the rate of improvement between the pre and post measurements of the main research's sample in the psychological skills ranged from 8.66 to 34.15%, in favor of the post measurement. The researcher has attributed the improvement of main research's sample, in the psychological skills and the degree of psychological hesitation, to the effectiveness of suggested mental strategies, which have included two axes. First axis is the main mental training, which has focused on developing the psychological skills (Ability to relax – Mental imagery – Concentration of attention), and decreasing the state of psychological hesitation. Second axis is the suggested mental training program, which has included the strategy of thinking about skillful duty, and the strategy of self-talk. These axes have an important role in decreasing the degree of psychological hesitation, and helped the player to understand the psychological requirements of Kumite activity.

These results agree with what has been indicated by Shimon & Ismael (2001). That there is an overlapping relation between the psychological skills. The development of psychological skills leads to the effectiveness of mental imagery. Consequently, the process of mental imagery contributes significantly to decreasing the tension and psychological hesitation, as well as increasing the degree of self-confidence.

Additionally, the researcher has attributed the decrease of degree of psychological hesitation to the content of suggested mental strategies, which has led to develop some of the psychological skills. In addition, the mental training has a positive effect on the psychological characteristics such as purposefulness, determination and persistence.

The above mentioned results agree with the other studies' results that were achieved by Ali (1998), Sayed (1998), Van (2002), Gaber (2004), Ibrahim (2005), Maksoud, (2007), Khalil (2008), Said (2009), Sebai (2011), Hafez (2010) and Lateef (2011). These results refer to that the mental trainings and strategies have a positive effect on the psychological characteristics and skills of the athletes.

As well as, Shimon (2000) has referred to that the mental strategies and skills have a significant role in decreasing the tension and anxiety, and preparing the psychological climate and nervous calmness in order to achieve the best results. Thus, through the above mentioned results, the first hypothesis has been achieved, which states that "the use of mental strategies (thinking about skillful duty - positive self-talk), which are used to develop the psychological skills (ability to relax - mental imagery - concentration of attention), contributes to decreasing the degree of psychological hesitation of the juniors kumite under the age of 16".

By observing table (2), it is clarified that there are statistically significant differences at 0.05 level between the pre and post measurements of the main research's sample in the effectiveness of tactical activity during the Kumite competitions, in favor of the post measurement and also there are differences at the rate of improvement between the pre and post measurements of the main research's sample in the effectiveness of tactical activity during the Kumite competitions, in favor of the post measurement with 63.64 %.

The researcher has attributed the improvement of effectiveness of tactical activity to the use of content of suggested mental strategies, which has led to develop some of the psychological skills and decrease the degree of psychological hesitation. The completeness of psychological aspect of the emerging player contributes necessarily to increasing the effectiveness of offensive and defensive tactical activity.

These results agree with what has been indicated by Alawi (2002) that the player executes the motor and tactical skills not only by using his limbs or muscles, but also by using his mind & thinking.

As well as, the above mentioned results agree with the other studies' results that were achieved by Van (2002) , Gabr (2004) , Maksoud (2007) , Khalil (2008) , Ibrahim (2010). Said (2009) , El-Sebai (2011) These studies have referred to the necessity of using the mental strategies in order to develop the technical performance (Physical – Tactical) for the players of individual and team sports. In addition to improving the level of defensive and offensive performance of the Kumite players.

Eventually, these results agree with what has been indicated by Saleh (2004) that there is significant positive correlation between the improvement of temperament and the level of offensive performance of female Karate players.

In this respect, Shimon (2000), Manoryk (2003), and Nguyen (2003) have referred to the importance of preparing a group of mental strategies that aims to decrease the stresses, anxiety and tensions, which results from the difficult circumstances of competition. As well as, it is necessary for the emerging player to work on increasing the muscular endurance in order to achieve his targets and win the competitions.

Additionally, Rateb (1999), Karthik (2000), Mikes (2001) have referred to that the programs of psychological training are considered one of the reasons of distinguished performance, which help the athletes to achieve the sports excellence.

Thus, through the above mentioned results, the second hypothesis has been achieved, which states that “the use of mental strategies (thinking about skillful duty - positive self-talk) has a positive impact on the effectiveness of tactical activity of the juniors kumite under the age of 16”.

Conclusions

Mental strategies (thinking about skillful duty – positive self-talk) have a positive impact, with statistical significant at level 0.05, on developing the psychological skills (ability to relax – mental imagery – concentration of attention) and decreasing the state of psychological hesitation for the juniors kumite under the age of 16.

Mental strategies help in increasing the effectiveness of tactical activity for the juniors kumite under the age of 16. There are differences at the rate of improvement between the pre and post measurements of the main research's sample in the psychological skills, degree of psychological hesitation, and effectiveness of tactical activity. These differences ranged from 8.66 to 63.64%, in favor of the post measurement.

Recommendations

According to the results and sample of research, the researcher recommends the following points:
The necessity of implementation of mental strategies (thinking about skillful duty – positive self-talk), which have an effective role in decreasing the state of psychological hesitation & increasing the effectiveness of tactical activity of the juniors kumite under the age of 16.

The necessity of the main skills of mental training, especially the ability to relax, mental imagery, and concentration of attention, which contribute to increasing the effectiveness of suggested mental strategies, and achieving the best results in tactical activity during the competitions.

It is necessary to help the emerging players to get benefit from using the mental strategies at the period that before the competition in order to achieve the best outcome for the tactical activity.

Using the psychological tests during directing and selecting the emerging players.

The necessity of combination between specialized psychologists and coaches, in order to prepare the player physically and mentally for the competition.

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