ANALYSIS OF STRESS MANAGEMENT IN KARATE ATHLETES: SURVEY IN WEST NUSA TENGGARA PROVINCE, INDONESIA

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Abstract:
This research aims to analyze in depth the stress management abilities of karate athletes in West Nusa Tenggara Province, Indonesia. This type of research is quantitative descriptive research, with a survey approach. The sample for this research was 30 male karate athletes who were undergoing PELATDA (Regional Training) and would be prepared to participate in the national karate championship in Indonesia. Athlete characteristics: age 18.01±3.2 years, training experience 10.46±0.5 years, age at first competition 11.87±5.9 years, number of competition involvement in one year 3 – 5 competitions. The instrument used in this research was a questionnaire prepared using a Likert scale. There are four dimensions in this instrument, namely the competition dimension, emotional dimension, substantial dimension and mental dimension. Data analysis was descriptive using a percentage formula, then grouped into four categories. The results of this study were 11 athletes (36%) had ‘very high’ stress, 5 athletes (19%) had ‘high’ stress, 6 athletes (21%) had ‘low’ stress 8 athletes (24%) had ‘very low’ stress. This conclusion is that stress is a psychological condition that must be managed well by athletes. Because stress can affect an athlete’s performance directly or indirectly. Practical ways to manage stress are positive thinking, taking special time for yourself, relaxation, and mental exercise. This research hopes to provide in-depth insight and information on the importance of managing stress in athletes in all types of sports.

Keywords: stress management, athlete performance, karate

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1. Introduction

Stress in athletes and sports refers to the body’s response to pressure or demands in training, competition preparation, or competition itself, which can trigger physiological responses such as increased heart rate and the release of stress hormones such as cortisol, as well as psychological impacts such as anxiety and self-doubt that can disturb the athlete’s focus and concentration (M. H. Yang et al., 2023). Athletes who will take part in a competition will feel anxiety within themselves, such as trepidation, anxiety, and lack of self-confidence, and what is surprising is mental down. This makes the participant’s focus and execution not ideal so it can cause effects, for example, not having enthusiasm to compete ((Reynoso-Sánchez et al., 2021), (Lin et al., 2022)). Stress can occur in all types of sports, especially karate. Karate is a sport that requires intense and hard physical contact. The physical components needed by karate athletes during training or competition include speed, agility, power, endurance, coordination, flexibility ((Almas et al., 2023), (Hikmah et al., 2023), (Fadhila et al., 2024)). Therefore, karate can result in a very fatal risk of injury. So, the importance of high physical ability, quality techniques and tactics, strong courage and achievement motivation which in turn will influence the athlete’s performance. However, to produce high performance, there is one factor that needs to be discussed and analyzed further, namely the influence of stress ((Prasertsri & Boonla, 2021), (Lee et al., 2023)).

Stress occurs because of continuous bad things, often this makes people angry and unfocused because it is impossible for them to exercise (Sukmana et al., 2021). Then, personal problems also arise at the training ground. Stress can also be interpreted as a term that describes a mental problem that can have characteristics such as trepidation, worry about what will happen, and anxiety (Reynoso-Sánchez et al., 2021). Stress is an individual’s emotional experience and cannot be seen directly. Stress in a person can provide inspiration to achieve something and be an important source in efforts to maintain balance in life. Stress is a personal reaction without certain elements that can be emotionally and conveyed relationally.

Based on the results of previous research, stress levels have a positive relationship with anxiety in karate athletes (Srianto, 2020). So, the higher the level of stress, the more anxiety will increase. In MMA (mixed martial arts), analysis results from 12 athletes show that injuries after a fight can cause athletes to become stressed (Gomes-Santos et al., 2022). Psychological resilience is a factor in dealing with stress. The results of this research explain that a confident approach and an optimistic approach have a positive and medium correlation in reducing stress in karate athletes (Kuçuk Kiliç, 2020).

Based on facts from unstructured observations and interviews, karate athletes in West Nusa Tenggara Province have indicated symptoms of stress, which are characterized by changes in performance in training and an inability to concentrate. These symptoms can be identified as stress ((Adi S. et al., 2023), (M. H. Yang et al., 2023)). In addition, many male athletes experience stress symptoms, although female athletes also experience stress symptoms. In further analysis, athletes showed symptoms of stress
for quite a long time and were experienced by athletes who had quite a lot of experience. The results of this identification encourage researchers to analyze these problems by publishing scientific papers. Based on this background, the aim of this research is to analyze in depth the stress management abilities of karate athletes in West Nusa Tenggara Province, especially when facing a competition or match.

2. Research Methods

This type of research is quantitative descriptive research using percentages, with a survey approach. This research procedure begins with observation to collect and identify problems. After the observation results are collected, the next step is data collection to analyze the level of stress experienced by the athlete. Data collection was carried out on Sundays when athletes were off training. The final stage is conducting a scientific study by writing down the research results and publishing them in the form of scientific articles.

The population of this study were all karate athletes from West Nusa Tenggara Province, Indonesia. Then, the sample selection used purposive sampling, so that the athletes selected to be involved in this research were 30 male athletes who were taking part in PELATDA (regional training) at the provincial level and would be prepared to take part in the national karate championship in Indonesia. PELATDA is a coaching program at the provincial level that must go through strict selection, so that the selected athletes have a high level of training, good physical abilities and good technical skills. Sample characteristics (mean ± SD), age 18.01±3.2 years, training experience 10.46±0.5 years, age at first competition 11.87±5.9 years, number of competition involvement in one year 3 – 5 competitions.

The preparation of the instrument was carried out in two stages. The first stage is to conduct a review of previous literature. This stress level instrument includes four dimensions, namely: competition dimension, emotional dimension, substantial dimension and mental dimension. The second stage was to conduct an FGD (forum group discussion) with experts, namely lecturers in the field of sports psychology and lecturers in karate coaching, then also involving karate sports coaches with national licenses. The purpose of FDG is to validate the instrument. The data collection instrument used in this research was a questionnaire.

3. Results

The following are the results of research based on data collection. This analysis includes the results of athlete statements and then analysis based on the percentage of athlete stress levels. The following is the formula used to analyze the percentage of stress levels in athletes.
From the results of the analysis of the data obtained, all aspects of the required dimensions can be explained. There are 20 statement indicators, an explanation of the examination results using manual calculations to obtain the following results (Table 1):

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Indicator</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>My body is stiff when going into a match</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>My legs are heavy when going to the match</td>
<td>13</td>
<td>1</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>I experienced muscle tension during the match</td>
<td>-</td>
<td>5</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>My body is tired before competing</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>My muscles hurt before the match</td>
<td>-</td>
<td>14</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Emotional</td>
<td>Negative thoughts interfere with concentration when competing</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>I have a hard time sleeping before the match</td>
<td>20</td>
<td>-</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Inability to concentrate during the game</td>
<td>-</td>
<td>12</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>My breathing is irregular during match</td>
<td>-</td>
<td>10</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>My face wrinkled during the match</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Substantial</td>
<td>My heart was pounding hard</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>I was shaking when I faced the match</td>
<td>6</td>
<td>10</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Careless during the match</td>
<td>-</td>
<td>-</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>I broke out in a cold sweat when facing the match</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Always want to urinate during the match</td>
<td>14</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>I often drink water before a match</td>
<td>14</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Mental</td>
<td>Tense when facing a match</td>
<td>15</td>
<td>-</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>I quickly get discouraged during the match</td>
<td>-</td>
<td>14</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>I have self-doubt during games</td>
<td>-</td>
<td>15</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Overthinking</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Based on the results collected from the table above, the level of stress management ability of the PELATDA Karate Karate athletes of West Nusa Tenggara Province is in table 2 below:
Based on the results of Table 2, the stress management scale for karate athletes is 'very high' for 11 athletes, 'high' for 5 athletes, 'low' for 6 athletes, 'very low' for 8 athletes.

4. Discussion

The results of the study in this research show the importance of knowledge coordination in an athlete's stress management program. This includes implementing organized stress management methods, mental preparation, and a holistic coaching approach (Thelwell et al., 2017), (Nugroho et al., 2022)). With this methodology, it is believed that athletes can achieve their mindset and can minimize stress or in other words, can achieve mental health in the long term. There are eight main factors that increase life stress levels in athletes including daily life stressors, for example, obstacles in relational relationships and performance as well as explicit stressors related to sport (Badaru et al., 2022). Daily life stressors include relationships with family, relational relationships, relationships with mentors, close relationships, injuries, training demands, transformations in training (Zenana et al., 2022). Athlete maturity is also related to how to manage stress, because athletes have good self-control (Prabowo et al., 2024).

Stress conditions experienced by athletes have negative consequences such as reduced physical and mental execution, lack of fixation and lack of concentration (Britton et al., 2019). This condition can affect athletes when in a match or competition; for example, athletes often make mistakes, are close to their opponents and force their opponents and even get fouled. An athlete has difficulties and demands that must be faced, for example, competition conditions that are full of tension from the judges, as well as strong conditions in group or team activities (X. Yang & Zou, 2022). Each athlete has their own goals that they want to achieve, having a target can create a demand for athletes to achieve the target. This can happen if there is a gap between the athlete’s ability and the target given; if the target given is still in accordance with the athlete’s ability, then this will have a big impact on the athlete. Likewise, if the objective demands given exceed the athlete’s abilities, it can cause harmful consequences and trigger side effects in the form of stress (Zhang, 2023). An unbalanced situation between demands and targets and the athlete’s abilities can trigger the development of side effects of stress.

High preparatory loads and tedious variations in competition preparation can trigger athlete fatigue so that athletes will train more often (Stepanova et al., 2022). In addition, as the time span for the championship gets closer, athletes’ fighting techniques will focus more on fighting or competing with other people to train their capacities and
systems; this makes athletes increasingly helpless against injury, thus bringing its own negative impacts. Conditions like this are a burden for athletes who are going to compete because when training, they should ideally let go completely, which can cause injury, whereas when competing, it will affect their performance ((Beck & Drysdale, 2021), (Shi et al., 2023)). This can, of course, put pressure on an athlete’s aggressive technique.

Several additional ways to help athletes control stress ((Chang et al., 2020), (Belz et al., 2020), (Jaiyeoba & Ogunsanya, 2021)). Based on the results of the research explanation, the first way is positive thinking; athletes can try to reflect on the circumstances that cause them stress. The second is to set a margin for yourself. An athlete needs to set aside time or space for themselves to do things they value. The third is being practical. Athletes need to learn how to reflect on what they can achieve. In addition, there are procedures that a person can use to reduce stress, including real activities, relaxation, and controlling how they behave. Then, mental training to strengthen self-efficacy, good self-efficacy in athletes can reduce stress, anxiety and fatigue ((Widyastuti et al., 2024), (Saniah et al., 2024), (Wibowo et al., 2024)). In addition, there is a need to increase athletes’ motivation to achieve. Previous research explains that as athletes increase achievement motivation, it can improve psychological well-being and in turn, can improve athlete performance ((Mandan et al., 2024), (Juita et al., 2024), (Prayoga et al., 2024), (Wijayanti et al., 2024)).

The limitation of this research is that the number of athletes in the sample is still small, so the research results are less objective. In addition, this type of research uses quantitative research, so it is burdensome when athletes fill out questionnaires inaccurately and there is a risk that athletes will not be honest in answering. It is hoped that the results of this research can provide in-depth insight and information on the importance of managing stress in athletes in all types of sports.

5. Conclusion

Stress is a psychological condition that must be managed well by athletes. Because stress can affect an athlete’s performance directly or indirectly. Based on the results of data analysis, it shows that the stress management abilities of PELATDA karate athletes in Nusa Tenggara Province show that 11 athletes (36%) have very high stress management abilities, 5 athletes (19%) have high-stress management abilities, 6 athletes (21%) %) have low-stress management abilities, and as many as 8 athletes (24%) have very low-stress management abilities. Apart from using questionnaires, there are also several additional ways to create good stress management, namely positive thinking, taking special time for yourself (me time), being practical, good routine activities, relaxation, controlling the way you behave, especially in dealing with other people, mental training, and joining useful informal organizations. Recommendations for further research are to combine mixed types of research (quantitative-qualitative) or to combine several other variables related to athlete psychology and performance. In addition, there is a need for analysis to analyze the direct and indirect influence of stress variables.
Conflicts of Interest Statement
The authors declare no conflicts of interest.

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