Anxiety and Performance of Scuba Diver

Rumpoko, S.S.
S3 Ilmu Keolahragaan
Universitas Sebelas Maret Surakarta
Surakarta, Indonesia
saktirumpoko1@gmail.com

Sitiastih, V.S.
Program Studi Pendidikan Olahraga
Universitas Muhammadiyah Surakarta
Surakarta, Indonesia
verasitiastih@gmail.com

Sudarmanto, E.
Program Studi Pendidikan Olahraga
Universitas Muhammadiyah Surakarta
Surakarta, Indonesia
es348@ums.ac.id

Abstract— A diver suffering from anxiety symptoms will definitely have an impact. Physical and psychological factors that will give negative effects on performance, and advanced exposure can cause loss of control of the body, cardiorespiratory system increases and cause panic. Anxiety is a psychological symptoms marked by anxiety, nervousness, anxiety, the fear experienced by someone on a different level. This study aims to open up insights to readers about anxiety in the sport of diving. In this study uses the study of literature as a deepening material so readers are easier to understand. Anxiety can be seen by looking at the way of symptoms that appear. In addition to that, Anxiety can be measured using various methods. Knowledge in understanding anxiety is very necessary to apply appropriate methods in the face of anxiety because when a wrong in the face of anxiety will affect the appearance of a diver.

Keywords— anxiety, performance, scuba diver

I. INTRODUCTION

A diver can move freely in the water like bird. With the freedom of belonging can do a variety of activities in the water [1]. Recreational scuba diving is many risk in the water [2][3]. Commonly known as the bends, Decompression illness (DCI) is amount of gas in body tissues caused reduction in pressure is too rapid. Reported to the Divers Alert Network in 2000 shows many case accident each years [4]. This is indicates divers who never experienced DCI possibly can occur permanent neuropsychological injury, other indicate is hyperintense lesions of subcortical cerebral white matter and degenerative changes of the cervical disk in amateur scuba divers [5]. The scuba divers who have panic experience will exposed stressful conditions generally more risk on DCI [6]. One of many factor to be useful in predicting panic behavior is trait anxiety [7]. Trait anxiety represents a personality and it shows how the individual feel in generaly [7].

II. SCUBA DIVING

Interest human in the underwater world has always existed. Driven by curiosity, explore new science and the need for food, people have do scuba diving for long time[1]. The origin of recreational diving can be traced to 1825. That year, William H. James, an Englishman, invented the first open-circuit self-contained underwater breathing apparatus (SCUBA) system. Later, closed circuit oxygen rebreather system in 1878 has developed by Henry Fleuss and Robert Davis. This system eliminated the air hose that had previously tethered divers and restricted their movement. This system had great function and used in military because bubbles were not exhausted into the water [1].

In many country, the important and growing industry is recreational scuba diving [8]. Examination data from The Professional Association of Dive Instructors (PADI) gives indication that increasing dive activity and certified diver [8]. For scuba diving, will be need swimming ability but not competitive swimmer. The diver must also have good conditions, it means the heart, circulation, and lungs do not have any problems.

All activities have some risk, include in scuba diving. The pressure is change with depth. Every changes depth in the water affect pressure to the body. The gases normally dissolved by tissues of body and blood. The increased pressure to body makes amount gases increased in tissues. By manage how deep, duration, and rate ascent can avoid decompression illness.

Underwater world can explored with properly equipment. Our eyes designed not to see through water, in water the view is blurred and distorted. Reduce distortion suggests use mask or face mask. Compressed gas diving equipment has given divers high freedom underwater to stay long period and deeper in the water.

For minimize risk of injury scuba diving must learn proper procedures entering and exiting the water, descending and ascending, controlling buoyancy, checking instrument and coordinating with buddy.

A. Causes of Diving Accidents

Scuba diving is one of most famous recreational enjoyed by millions of divers in the world, but also more risk [9][8]. Based data from the Divers Alert Network estimated fatal accidents in scuba diver each years [10]. Dive injuries are the result of many circumstances and events, including environmental, medical, and procedural factors. Environmental factors include any natural conditions such as cold water, currents or wave action, depth, and visibility. Medical factors include obesity, smoking, alcohol use, cardiovascular disease or high blood pressure, breathing difficulty (both temporary and chronic), dehydration, and a general lack of physical fitness. Procedural factors include buoyancy control, air supply issues such as being out of air or low on air, rapid ascents, missed decompression, a lack of recent familiarity with basic or critical emergency skills, and improper use of dive equipment [11].
The pressure every 10 meter of sea water depth will increase 1 atm. In the conditions when the diver is submerged and breathing with the gas in scuba tank, and deeper diver dives more possible the gas taken in the divers tissues [9][11]. Immersion is one of conditions can make stress [9]. Drowning is incident cause of death in diving [12]. Pressure from expanding gas during ascent, or compression of air spaces within the diver during descent, are the most common injuries reported to Divers Alert Network (DAN) each year. Decompression sickness (DCS) and arterial gas embolisms are referred to collectively as decompression illness (DCI) [13].

With DAN statistic evidence the most dangerous dives were at the first dive and the first open water dive. The factors contributing to the death are classified into following group: (1) Diving techniques; (2) Human factor; (3) Equipment factor; (4) Environmental factor [14].

B. Preventive Action

The development and widespread of technology, we can used the internet access information how to diving safely [9]. Other preventive is managed dive plan before do activity and more exercise training in scuba diving.

Specific techniques for panic prevention. Point to understand that breath control and relaxation is the key point. The calming response is a fast and effective for relaxation. Divers can use this techniques to increase breath control and relaxation.

Mental rehearsal for controlling underwater stress. This techniques takes divers to deep state of relaxation and guide through mental rehearsal using imagery.

C. Anxiety

An overwhelming sense of apprehension refers to Anxiety. Indicated by physiological signs, anxiety can produce both psychological and physical symptoms. Anxiety disorders categorized six disorders: panic disorders, specific phobia, social phobia, obsessive compulsive disorder, posttraumatic stress disorder and acute stress disorder [15].

Panic Disorder is characterized by recurrent, unexpected panic attacks. A panic attack is characterized by a period of fear or discomfort during which a person experiences at least four panic symptoms. Symptoms of panic attacks are: Racing or pounding heart, Sweating, Trembling or shaking, Shortness of breath, Feeling of choking Chest pain or discomfort, Nausea or abdominal distress, Feeling dizzy, unsteady, or faint [15].

Physical symptoms of anxiety can vary widely, from the quickened heartbeat and damp palms, to the crippling, paralyzed feelings of a full-blown panic attack or phobic reaction.

Trait anxiety is one factor has been found to predicting panic behavior. In other case firefighter reported during high intensity treadmill exercise shows respiratory distress and mask removal behavior [7].


Vann R, Lang M. Recreational diving fatalities. Undersea Hyperbmed. 2011;38:257-60


