



The Nutritional Status of Athletes in the Athletics Branches of DKI Jakarta During the Covid-19 Period Based on Anthropometry

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Abstract

Changes in the habit of consuming food at regular training venues to individual athletes' homes during a pandemic should still meet the nutritional needs of the athletes. Athletes' performance in athletic sports must be supported by good nutrition, even during the Covid-19 period. This research uses descriptive quantitative research techniques with survey methods using google form with data analysis using percentages. This study aimed to determine the level of assessment of the nutritional status of athletes in athletic in DKI Jakarta. The research conducted revealed that as many as 100% (n = 104) of the research subjects were muscular athletes under the DKI-Jakarta Government's auspices, 44 were female, and 66 were male. Anthropometry results for male athletes showed an average nutritional status at BMI of 32.89 with over nutritional status and for female athletes at BMI of 32.68 with over nutritional status. Hence, athletes' average dietary rate in athletic sports in DKI Jakarta is in the category of excess nutrition in the Covid-19 condition. The different nutritional level was obtained based on the anthropometric assessment of athletes in athletic sports during the Covid-19 period.

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INTRODUCTION

The current Covid-19 outbreak has caused losses such as sports training being closed to follow health protocols from the government and training activities carried out at home or online. Exercising at home using various exercises that are safe, simple, and easy to do is perfect for avoiding airborne coronaviruses and maintaining fitness levels

(Chen et al., 2020). The 2019 Coronavirus (Covid-19) pandemic has significantly impacted the global higher education community (Joseph Crawford et al., 2020) and included in sports training activities that have carried out online training because several sporting events have been postponed. Initially, several events were held without spectators to reduce close contact, but at the National Basketball Association, it was found that a

player tested positive for Covid-19 (Toresdahl & Asif, 2020).

Several other quarantine consequences were carried out on sports training activities, such as the absence of training, competition, lack of communication between coaches and athletes, inability to move freely, lack of sun exposure, and inappropriate sports training conditions (Jukic et al., 2020).

Unfortunately, in Indonesia, this activity was not followed by comprehensive readiness in terms of mental, physical, individual facilities, and infrastructure to face this widespread epidemic. This outbreak has had such a significant impact on athletic training activities in DKI Jakarta, as a training center for youth from all regions of Indonesia; of course, this outbreak affects athletes' condition. Achievements were hampered because many competition and competition events were postponed, and their implementation was canceled. The current situation is undoubtedly uncomfortable for athletes to do exercises independently in their respective homes. In addition to training, activities are carried out at home alone. The dietary pattern consumed by athletes has also changed, especially in the number of calories consumed, and the calories used must be appropriate. If it is not suitable, the athlete will experience a weight deficit (Hector & Phillips, 2018).

This needs to be known to support performance in achieving achievements. Food functions to maintain body mass and strength for the better are easier said than done, so improving nutrition requires support from participants (Swenson & Bärtsch, 2014). Because food can help improve the health and performance of athletes (Domínguez et al., 2017). Also, nutritional deficiencies can lead to reduced athletic performance (Hornstrom, Friesen, Ellery, & Pike, 2011), so it is vital for athletes to ensure adequate consumption of dietary nutrition, maintain body fat and body mass index in line with the sport they are

engaged in (Agirbas, Keyf, Aggon, & Ozan, 2018).

Physiological data in meeting nutritional needs for athletes are (1) achievement of ideal body composition, (2) nutritional support during training, (3) strategies for the adequacy of fluids and fuel during competition, and (4) physical performance support supplements (Holden & Baghurst, 2018). The level of an athlete's health status can be determined by assessing the athlete's nutritional status. Health is a state of health, both physically, mentally, spiritually, and socially, allowing everyone to live productively socially and economically (Ministry of Health of the Republic of Indonesia, 2009). If this health is associated with the condition of athletes who are declared active and productive, they must improve the quality of physical and psychological health. In adolescence, the body's need for nutrients reaches a maximum level, this very high need for nutrients is needed to meet the body's development needs (Veronica, Dachlan, & Taiyeb, 2013). Many athletes neglect this nutritional fulfillment, especially for athletes at a young age.

This is because, at a young age, athletes prioritize their performance more than they care about health risks in the future (Sale & Elliott-Sale, 2019). Athletes in children and adolescents need their nutritional changes to consider the demands of their physical activity (Smith & Jeukendrup, 2013). During adolescence, energy is required to meet individual growth and development needs and participate in physical activity during exercise and competence (Desbrow et al., 2014). Both coaches and parents need to know the nutritional status assessment when there is a change in training sites. To find out physical health, it can be assessed based on athletes' nutritional status, especially during the Covid-19 period, which greatly affected athlete's performance. If the athlete's nutritional status is in good condition, of course, the physical condition will not quickly decline. During

Covid-19, athletes from training centers have experienced changes in diet. This is because of the habit of being used to training dormitories then moving to their respective homes.

Changes in improper eating habits allow adolescents to experience eating and nutritional disorders (Agirbas et al., 2018). In adolescence, eating habits such as high sugar intake could be that high-fat foods cause healthy damage (Saxena, 2017). To assess nutritional status using the anthropometric method using four variables, namely 1) gender, 2) age, 3) body weight, and 4) height (Thamaria, 2017). One technique used is the Body Mass Index (BMI) or Body Mass Index (BMI). So it is necessary to measure the nutritional status parameters of athletes during a pandemic so that the results of these measurements can be used as a reference to compare whether athletes' nutritional status during the pandemic is in good condition or changes.

METHODS

This study used a survey method with a quantitative data analysis questionnaire survey. The data collection process on the subject was carried out by measuring body weight using a weight scale with a measuring accuracy of 0.1 Kg. Measurement of height using a microtome with an accuracy level of 0.1 cm (Thamaria, 2017). As a result of being obstructed by the Covid-19 outbreak, the researchers provided a google form to the subjects given to athletic athletes in DKI-Jakarta from 12 June 2020 to 16 June 2020, which contained questions regarding identity, agency origin, age, body height, and height. The number of respondents was n = 104, with 66 men and 44 women using the total sampling technique. Assessment of nutritional status uses the Kaup Deveport formula as follows:

$$IMT = \frac{\text{Weigh (Kg)}}{\text{Height (m)} \times (\text{Height}) (m)}$$

With the classification of body mass index as follows:

Table 1. Classification of Body Mass Index (IMT) (Thamaria, 2017)

IMT	Nutritional Status	Category
<17.0	Poor nutrition	Very thin
17.0-18.5	Less nutrition	Thin
18.5-25.0	Good nutrition	Normal
25.0-27.0	More nutrition	Fat
>27.0	More nutrition	Very Fat

FINDINGS AND DISCUSSION

Findings

Research activities carried out through filling in the google form given to 104

respondents for athletes in the DKI Jakarta athletic sport obtained findings.

Table 2. Results of Research on Nutritional Status and Anthropometry

Male athletes n = 66					
No	Component	Skors Min	Skors Maks	Rerata	SD
1	BB	32	85	54.55	11.70
2	TB	135	183	164.5	11.21
3	IMT	22.53	46.44	32.89	5.43

Female Athlete n = 44

No	Component	Skors Min	Skors Maks	Rerata	SD
1	BB	25	110	52.92	15.31
2	TB	137	180	160.45	9.11
3	IMT	17.85	61.11	32.68	8.07

In table 2, it can be seen that the number of athletes was 66 male and 44 female athletes. In the table of male athletes, it is known that the lowest body weight is 32 kg. The highest is at 85 kg. The average body weight of male athletes is 54.55 kg, the average height is 164.5 cm, and the highest BMI value is 46.44, the lowest BMI is at number 22.53, the average BMI at 32.89, which falls into the category of excess nutrition. In the female athlete column, it is known that the lowest body weight is 25 kg. The highest is 110 kg, the average athlete's body weight is 52.92 kg, the average height is 160.45 cm, and the most

elevated BMI is 17.85, the lowest is 61.11, the average BMI is 32.68, which means that more nutrition categories.

The researcher's explanation in table 3 about the results of the research on the nutritional status with anthropometric parameters of male athletes can be seen in table 3. In table 3, it is known that as many as six people or 9.09% of athletes are in good nutritional status, 9 or 13.63% are over nutritional status, as many as 51 people or 77.27% of male athletes were in excess dietary grade during the pandemic.

Table 3. Results of Assessment of Nutritional Status with Anthropometric Parameters for Men n=66

IMT	Frekuensi	Persentase	Nutritional Status	Category
<17.0	0	0	Poor nutrition	Very thin
17.0-18.5	0	0	Less nutrition	Thin
18.5-25.0	6	9.09	Good nutrition	Normal
25.0-27.0	9	13.63	More nutrition	Fat
>27.0	51	77.27	More nutrition	Very Fat
Jumlah	66	100%		

While the results of the nutritional status research with anthropometric parameters in female athletes, it is known that as many as 1 or 2.27% of athletes are in low dietary status, 4

or 9.09% are of good nutritional quality, 4 or 9.09% are of overnutrition status, and 35 people or 79.54% are overweight. In summary, it can be seen in table 4.

Table 4. Results of Assessment of Nutritional Status with Anthropometric Parameters for Women n=44

IMT	Frekuensi	Persentase	Nutritional Status	Category
<17.0	0	0	Poor nutrition	Very thin
17.0-18.5	1	2.27	Less nutrition	Thin
18.5-25.0	4	9.09	Good nutrition	Normal
25.0-27.0	4	9.09	More nutrition	Fat
>27.0	35	79.54	More nutrition	Very Fat
Jumlah	44	100%		

The results of the assessment of nutritional status with anthropometric

parameters of male athletes at each athletic sports agency under the auspices of the DKI

Government can be seen in Table 5 below:

Table 5. Results of Assessment of Nutritional Status with Anthropometric Parameters for Men =66

IMT	Frekuensi						Nutritional Status	Category
	POPB	PPOP	PPLM	Pelatda	Pengprov	Klub		
<17.0							Poor nutrition	Very thin
17.0-18.5							Less nutrition	Thin
18.5-25.0	1		1			4	Good nutrition	Normal
25.0-27.0	3		3	1		2	More nutrition	Fat
>27.0	6	6	5	10	1	23	More nutrition	Very Fat
Total	10	6	9	11	1	29		

Based on table 5, it is known that the nutritional status of athletes from POPB is one person with normal nutritional status, three people with overnutrition status, and six people with excess dietary quality. There are six athletes from PPOP with overnutrition status. One athlete from PPLM with good nutritional status, three people with

overnutrition status, and five people with overnutrition status. As many as 1 Pelatda athlete with excess dietary quality. There are four athletes from the DKI Athletic Club with good/normal nutritional status, two people with overnutrition status, and 23 people with excess nutritional status.

Table 6. Results of Assessment of Nutritional Status with Anthropometric Parameters for Women n=44

IMT	Frekuensi						Nutritional Status	Category
	POPB	PPOP	PPLM	Pelatda	Pengprov	Klub		
<17.0							Poor nutrition	Very thin
17.0-18.5						1	Less nutrition	Thin
18.5-25.0		1				3	Good nutrition	Normal
25.0-27.0		2				2	More nutrition	Fat
>27.0	2	4	1	6	7	15	More nutrition	Very Fat
Total	2	7	1	6	7	21		

In table 6, it is known that the results of the assessment of nutritional status in female athletes, as many as two people from POPB with overnutrition status, one person from PPOP athletes with good/average dietary level, two people with over nutritional status, and four people with excess dietary quality. As many as one athletes from PPLM in different

nutritional statuses, six athletes from Pelatda with extra dietary status, as many as seven people from Pengprov in excess nutritional status. One athlete from the club with malnutrition status, three people with normal nutritional status, two people with overnutrition status, and 15 people with overnutrition status.

Discussion

Physical activity during the pandemic has experienced many changes among athletes, difficulties in accessing the field, difficulty in carrying out full training, of course, greatly disturbing the athlete's need for achievement. The habit of eating food balanced with regular exercise has now changed. This is known based on the measurement of BMI (Body Mass Index) carried out by researchers. An increase in Body Mass Index indicates a range of body mass and height that is not balanced or away from ideal body weight. However, the BMI measurement in athletes seems overweight or over nutrition because the muscle mass in active athletes has greater muscle mass than people who do not train regularly. A study stated that the higher the athlete's BMI value, the shorter the running distance will be (Sedeaud et al., 2014).

A reduction or increase influences the increase or decrease in BMI in physical activity, but the calories that enter through food intake are not balanced, so it is essential to know the body's nutritional needs both with high and low activity.

Proper nutrition is essential for sports observers to know, especially for coaches, regarding their athletes' health; coaches need to know about nutrition practices and the role of nutrition that involves athlete's career (Stewart, Schiavon, & Bellotto, 2017). The need for nutrition knowledge is generally used to support athletes' performance—both in nutritional deficiencies and the fulfillment of calories in the body. The number of calories needed in each sport also varies. This difference is none other than to support the athlete's performance.

Athlete's performance is influenced by several important things, including a strong foundation in physical condition, experience, training programs, and nutrition (Peeling, Binnie, Goods, Sim, & Burke, 2018). Also, nutrition helps the brain's performance receive information from the body and the surrounding

environment to determine exercise steps and optimize performance and prevent injury to vital organs (Getzin, Milner, & La Face, 2011). Some critical ways that coaches can do to increase athletes' knowledge of the importance of maintaining body nutrition are: (1) Trainers must educate themselves about nutrition, (2) focus on the principles of healthy eating, (3) focus on nutrition for sports, (4) focus on food availability and preparation, (5) consider food choices at home and in restaurants, (6) consider the timing and type of food and snacks, (7) consider nutrition decisions for competition (8) hydration principles, (9) when must consult with experts, and (10) make athletes and parents understand nutrition (Holden & Baghurst, 2018). Some athletics numbers, especially for runners, do not rule out using training times of more than 30 minutes. Exercises with endurance requirements can cause dehydration and depletion of carbohydrates (Jeukendrup, 2011), thus requiring an individual nutritional program. Athletes should be educated about the nutrients needed to control body composition and the energy requirements necessary dibutuhkan (Jukic et al., 2020). Energy availability can be described as the amount of remaining energy that is digested dibutuhkan (Jukic et al., 2020) to support essential body functions and physiological processes, including growth, immune function, activation, and thermoregulation, as well as the energy needed for exercise has been utilized (Sale & Elliott-Sale, 2019). Energy availability, which refers to energy intake about power for training or competition, establishes an essential foundation for a sports nutrition strategy (Kessinger, 2018).

The research, which is only limited to athletes in athletic sports in DKI Jakarta and only uses the Body Mass Index (BMI) measurement technique, hopes that the data obtained from the research can be used as a reference to determine the nutritional status of athletes in the future. It can be used to develop

studies or research in other sports. Nutrients as absorbed or digested molecules, organic or inorganic, are required for an organism's routine physiological functions, such as survival, growth, maintenance, and reproduction (Watts, Lawrence, & Lawrence, 2020).

Nutrition plays a vital role for athletes competing in sports where the expression of explosive power and strength is essential for competitive success (Watts et al., 2020). Also, to support the athlete's brain performance. Parents and coaches' support is vital to keep the nutritional status of athletes both at the training ground and at home. The study results state that one of the supports of parents in maintaining the nutritional quality of children is proven that they expect the provision of healthy water and food consumption during competitions (Bolter et al., 2020).

CONCLUSION

This study aims to determine the nutritional assessment status of athletes in athletics in DKI Jakarta. During the Covid-19 outbreak, the training program that is usually applied at designated training centers was carried out at home with an online trainer's help. The nutritional status assessment results of 66 male athletes and 44 female athletes showed an increase in body mass and were included in the category of excess nutrition.

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