



Psychological And Nutritional Analysis of Athletes Towards The Provincial Sports Week (Porprov) in Semarang City 2023

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Abstract. This An athlete's performance is an interaction between several factors, such as technical, tactical, physical and mental aspects. Exercise training shows evidence of improving fitness, well-being and health. However, while strenuous exercise may be detrimental physiologically, it can also affect the person psychologically. Although high-performance athletes may not have a clinical diagnosis of an immune deficiency, there is evidence that prolonged and intense exercise can suppress the immune system, impairing exercise performance. Extreme training is also linked to psychological distress, as clinical evidence shows that vigorous training induces anxiety and stress. The Indonesian National Sports Committee (KONI) Semarang City has a program called the Semarang Emas Program (PSE), which is filled with outstanding athletes at the provincial and national level, totaling 190 athletes from various sports. The aim of this research is to analyze the psychological conditions and nutrition consumed by athletes during training for the Provincial Sports Week competition, which is a multi-event sports competition and is held every four years. So it is necessary to prepare and analyze whether psychological readiness and nutritional intake are appropriate for athletes who will compete in PORPROV events. On 9-15 September 2023 in Pati Raya there will be PORPROV, which will be attended by more than 1,371 athletes.

Keywords: Personality, Nutrition, Porprov.

1 Introduction

The performance of an athlete is an interaction between several factors, such as technical, tactical, physical, and mental aspects [1]–[3]. The psychological aspects influencing athlete performance vary from one individual to another. Athletes are supported by a network of teammates, coaches, parents, and staff working towards the main goal of optimizing sports performance. Research evidence indicates that a long-term and balanced diet is key to optimal brain function and mental health [4], [5].

Sports training shows evidence of improving fitness, well-being, and health [6]. However, intense training may have physiological drawbacks and can also impact individuals psychologically [7]. Although high-performing athletes may not be clinically diagnosed with immune deficiencies, there is evidence that prolonged and

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intense sports can suppress the immune system and interfere with sports performance [8]. Extreme exercise is also associated with psychological stress, as clinical evidence suggests that heavy training induces anxiety and stress [9].

On the other hand, sports performed at specific durations and intensities can have potential impacts on gastrointestinal health [10]. Gut microbiota can significantly affect human health by shaping a healthy microbiome in the digestive system that benefits the host. The effects of gut microbiota on health and sports performance depend on their composition [11]. Studies have shown that diet (e.g., types, amounts, and ratios of macronutrients) significantly impact microbiota composition and metabolism [12]. Proper food choices are necessary to minimize the risk of gastrointestinal (GI) stress in competitive athletes by ensuring rapid gastric emptying, optimal absorption of water and nutrients, and sufficient splanchnic blood perfusion before competition [13]. Supplementation is also part of the diet that may directly influence the microbiota.

Prolonged and high-pressure athletic training can increase the risk of injury, infections, and depression, such as upper respiratory tract infections, gastrointestinal discomfort, and psychological disorders [14]. The terms "anxiety," "anticipation," and "stress" are interconnected, where stress is described as a process in which someone perceives danger and reacts with a series of psychological and physiological changes, which may include increased anticipation and anxiety [15]. Anxiety is a negative emotion characterized by unease, heightened arousal, and worries, correlating with a sympathetic or fight-or-flight response. Both conditions can stimulate aspects of human psychophysiology. Mood changes and stress are common issues in athletes due to competitive stress [16]. Mood is a collection of transient feelings that vary in intensity and usually include more than one emotion [17].

The National Sports Committee of Indonesia (Komite Olahraga Nasional Indonesia or KONI) in Semarang City has a program called the Semarang Emas Program (PSE), which includes high-achieving athletes at the provincial and national levels, totaling 190 athletes from various sports disciplines. The aim of this research is to analyze the psychological conditions and nutrition consumed by athletes during training in preparation for the Provincial Sports Week, a multi-event sports competition held every four years. Therefore, it is necessary to prepare and analyze whether the readiness is sufficient.

2 Method

The method employed in this research is a survey method with an ex post facto research design. It is used to determine the psychological and nutritional conditions of athletes participating in the Provincial Sports Week (PORPROV) in Semarang City. With a total of 190 athletes from various sports disciplines competing. To achieve the research objectives, the following data collection procedures were conducted by the researcher:

1. Obtaining research permits.
2. Audience with Policy Stakeholders, namely the Youth, Sports, and Tourism Office.

3. Socializing the research plan with the Chairman of the National Sports Committee (KONI) of Semarang City.
4. Identification of subjects, population, and research sample.
5. Development of instruments using the Sport Personality Questionnaire 20 (SPQ 20) translated into Indonesian.
6. Preparation of the nutrition intake instrument for athletes adjusted to the needs of each sports discipline.
7. Recruitment and training of data collection teams.
8. Collection of psychological data and nutrition assessment of athletes in each sports discipline.
9. Data analysis.

Psychological Instrument: The data collection instrument used in this research is the Sport Personality Questionnaire 20 (SPQ 20) from [18]. This questionnaire aims to assess the psychological personality of athletes with 20 psychological scales and is widely used by psychological researchers. For a clearer understanding of indicators for each variable, refer to the image below:

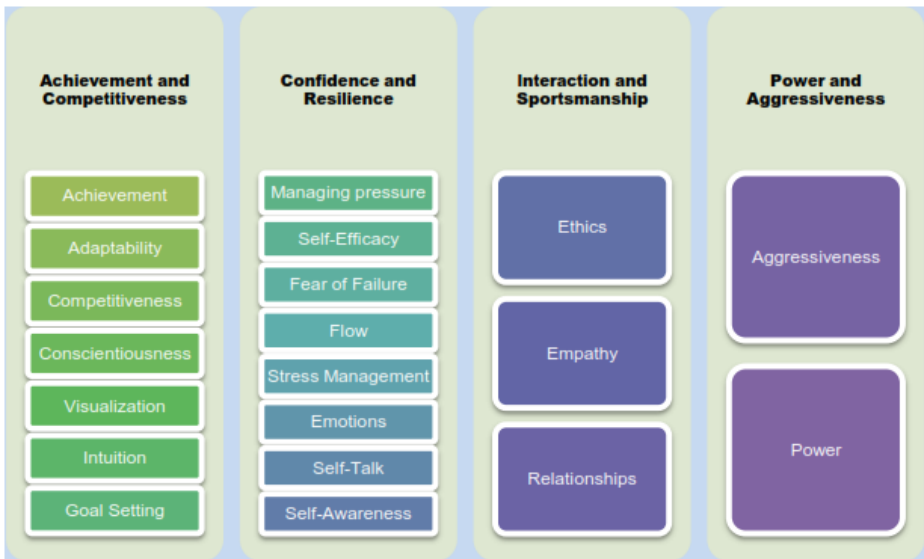


Fig. 1. Framework SPQ20 [18]

The test is administered using a questionnaire consisting of 168 questions with possible answers based on the respondents' habits, choosing from 5 categories: never, sometimes, moderate, often, very often, and always. The reliability is between 0.6-0.8 [18]. SPQ20 measures 20 dimensions of mental strength divided into 4 areas: achievement and competitiveness, confidence and resilience, interaction and sportsmanship, power and aggressiveness.

Nutritional Instrument: The original questionnaire regarding qualitative recommendations for pre-training nutrition is used to assess athletes' nutritional

behaviors. The questionnaire consists of 15 statements (items) about eating behavior during the pre-training period. Responses are evaluated on a 5-point Likert scale (from 1 to 5, from "definitely not," "more likely not," "difficult to say," and "more likely yes" to "definitely yes"). Items in the questionnaire relate to eating behavior crucial for post-training nutrition strategies, enhancing the ability to exercise and the rate of regeneration processes. The questionnaire is validated and assesses the pre-training eating habits of athletes over the past 6 months. Based on the questionnaire results, the level of individual nutritional recommendation implementation and the overall index of rational nutrition behavior during the pre-exercise period are assessed. The questionnaire's validity is confirmed through repeated testing (n = 32), obtaining results that confirm the scale's reliability (r = 0.378; p = 0.035). Good internal scale consistency is also confirmed (Cronbach's α coefficient is 0.77) [19].

3 Results

The socio-demographic sample is presented in the table below, with a total of 285 athletes (184 males and 101 females) from 23 sports disciplines.

Table 1. Mean and standard deviation data of psychological and nutritional conditions of athletes in the Provincial Sports Week (Porprov) in Semarang City (n=285).

Indicator	Acromodelling (n=3)		Fencing (n=2)		Weightlifting (n=3)		Athletic (n=10)		Badminton (n=5)		Balap (n=5)		Sepeda		Bodybuilding (n=8)		Handball (n=27)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Achievement	3.44	0.79	3.92	0.59	3.50	0.29	3.53	0.57	3.60	0.45	3.70	0.79	3.87	0.60	3.73	0.51		
Adaptability	3.67	0.95	4.50	0.35	4.33	0.58	3.70	1.16	3.45	0.33	4.20	0.54	4.16	0.58	4.02	0.74		
Compete	4.17	0.73	4.67	0.47	4.33	1.01	4.02	1.11	4.07	0.52	4.53	0.42	4.67	0.35	4.50	0.41		
Conscientiousness	4.25	0.75	4.50	0.71	4.67	0.58	4.20	1.05	4.00	0.40	4.75	0.56	4.88	0.19	4.60	0.48		
Visualization	3.62	0.84	4.29	0.21	4.38	0.84	3.63	1.08	3.91	0.61	4.17	0.87	4.61	0.59	4.35	0.59		
Intuition	3.07	0.99	3.00	0.28	3.80	0.35	2.96	0.93	3.00	0.58	3.64	0.71	2.85	1.04	3.33	0.51		
Goal setting	3.74	1.14	4.17	1.18	4.26	0.72	3.56	0.98	3.44	0.35	3.93	0.66	4.22	0.54	4.08	0.68		
Manage_presure	3.17	0.88	3.75	0.11	3.39	0.85	3.25	0.85	2.90	0.30	3.63	0.60	3.54	0.74	3.47	0.63		
self_efficacy	3.52	1.03	3.50	0.24	3.96	0.68	3.57	1.02	3.62	0.51	3.98	0.40	4.08	0.35	3.84	0.61		
Fear_failure	2.78	0.77	3.17	1.65	3.00	0.58	3.23	0.85	3.00	0.71	3.40	0.43	3.88	0.69	3.30	0.66		
Flow	3.50	0.66	3.88	0.53	3.58	0.72	3.80	1.02	3.30	0.54	4.20	0.67	3.88	0.65	3.97	0.64		
Stress_management	3.83	1.04	3.92	0.35	4.00	0.88	3.75	0.84	3.90	0.32	3.73	0.69	4.54	0.39	4.01	0.67		
Emotion	3.58	1.01	3.75	0.71	3.75	1.09	3.18	1.28	3.55	0.62	4.10	0.58	4.28	0.69	4.05	0.65		
Self_talk	4.67	0.44	4.59	0.59	4.33	0.67	3.87	0.91	4.13	0.72	4.37	0.80	4.65	0.51	4.43	0.57		
Self_awareness	4.09	0.79	4.26	0.53	4.21	0.69	3.95	1.02	3.85	0.27	4.33	0.67	4.53	0.65	4.27	0.58		
Ethics	4.40	0.40	4.60	0.57	4.67	0.58	4.22	0.77	4.36	0.61	4.40	0.55	4.68	0.35	4.53	0.55		
Emphaty	3.60	0.92	3.60	0.85	3.20	0.35	3.22	0.66	3.20	0.51	3.36	0.57	3.63	0.58	3.59	0.53		
Relationship	3.00	0.33	3.01	0.88	3.63	0.38	3.42	0.70	3.08	0.41	3.55	0.29	3.57	0.27	3.55	0.36		
Aggressiveness	2.00	0.43	2.38	0.18	2.58	0.52	2.58	0.58	2.20	0.57	2.75	0.35	2.53	0.66	2.50	0.55		
Power	1.92	0.38	2.13	0.18	2.08	0.14	2.75	0.82	2.40	0.63	2.70	0.72	2.78	0.62	2.73	0.62		
Impression	3.40	0.35	3.20	0.28	3.47	1.03	3.30	0.87	3.36	0.26	4.16	0.59	3.95	0.69	3.81	0.64		
Height	161	4	163	3	162	1	165	6	166	6	172	6	169	4	159	6		
Weight	61	4	76	35	59	7	61	11	62	4	73	12	76	15	57	13		
Calori	4631	600	3967	372	3068	766	3256	861	3223	1037	3771	1138	3386	992	3156	976		
Protein	205	85	167	25	131	23	146	29	137	28	199	78	183	59	125	41		
Fat	158	42	119	31	107	6	115	42	95	32	114	35	139	31	110	32		
Carbo	589	103	571	166	400	163	413	130	447	165	484	196	427	102	417	135		

Indikator	Bola Voli (n=38)		Bridge (n=6)		Drum Band (n=15)		Futsal (n=7)		Hockey (n=13)		Menembak (n=7)		Paralayang (n=3)		pencak silat (n=16)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Achievement	3.56	0.70	3.56	0.5	3.58	0.57	2.95	0.7	3.70	0.52	3.00	0.58	3.28	0.58	3.81	0.49
Adaptability	3.56	0.81	3.54	0.4	3.85	0.72	3.61	1.0	3.96	0.61	2.82	0.64	3.08	0.80	4.05	0.76

Compete	4.11	0.74	4.28	0.7	4.33	0.62	4.07	0.8	4.33	0.68	3.43	0.74	4.17	0.73	4.47	0.65
Conscientiousnes	4.38	0.75	4.21	1	4.28	0.60	3.50	1.0	4.42	0.78	3.36	0.81	4.25	0.66	4.59	0.68
Visualization	3.76	0.73	4.10	0.8	4.05	0.78	3.63	0.9	4.13	0.68	3.29	0.71	3.86	0.52	4.31	0.67
Intuition	3.02	0.71	2.93	0.6	3.15	0.77	3.11	0.7	2.95	0.70	2.40	0.31	3.27	0.23	3.26	0.57
Goal_setting	3.68	0.78	3.69	1.0	3.56	0.68	3.64	1.0	3.58	0.72	2.97	0.73	3.78	0.73	3.92	0.77
Manage_presure	3.20	0.72	3.45	0.5	3.32	0.52	3.38	0.6	3.00	0.63	2.76	0.51	3.00	0.72	3.49	0.68
self_efficacy	3.62	0.67	3.48	0.7	3.61	0.48	3.72	0.7	3.54	0.54	2.92	0.63	3.41	0.53	3.92	0.74
Fear_failure	2.82	0.82	3.17	0.4	3.93	0.81	2.67	0.9	3.15	0.72	2.76	0.46	2.67	0.34	3.27	0.69
Flow	3.61	0.63	3.83	0.4	3.78	0.81	3.68	0.9	3.63	0.57	3.00	0.48	3.50	0.50	3.92	0.78
Stress_management	3.73	0.78	3.83	0.7	3.94	0.65	4.09	0.8	3.74	0.75	3.17	0.66	4.22	0.58	4.00	0.67
Emotion	3.39	0.94	3.88	1.0	3.73	0.68	3.61	0.7	3.50	0.76	2.93	0.70	3.50	0.43	3.67	0.69
Self_talk	4.14	0.79	4.17	0.8	3.96	0.76	4.19	0	4.31	0.81	3.52	0.95	4.00	0.44	4.43	0.59
Self_awarenes	3.88	0.76	3.84	0.9	3.95	0.70	3.82	1	3.91	0.74	3.18	0.70	3.84	0.59	4.17	0.63
Ethics	4.33	0.71	4.40	0.4	4.41	0.53	4.20	0.6	4.55	0.68	3.57	0.82	4.13	0.42	4.43	0.65
Empathy	3.24	0.74	3.30	0	3.31	0.42	3.14	4	3.49	0.49	3.09	0.60	3.27	0.50	3.29	0.57
Relationship	3.05	0.62	3.29	0.5	3.39	0.57	3.02	9	3.21	0.63	2.72	0.33	3.21	0.40	3.46	0.52
Agressiveness	2.59	0.62	2.33	0.3	2.48	0.57	2.96	1.0	2.38	0.63	2.04	0.44	2.33	0.63	2.72	0.67
Power	2.23	0.70	2.25	1	2.60	0.57	2.21	9	2.44	0.52	2.39	0.43	2.17	0.72	2.45	0.68
Impression	3.36	0.78	3.53	5	3.39	0.54	3.09	1	3.63	0.91	2.66	0.38	3.53	1.14	3.60	0.81
Height	165	5	164	6	160	7	167	5	166	5	163	2	155	3	163	5
Weight	63	10	73	12	50	10	62	3	60	5	62	6	57	17	64	13
Calori	2407	1296	2700	785	3633	910	3614	790	3377	2	3505	1817	2918	497	3440	890
Protein	102	56	106	37	144	34	147	21	150	47	166	33	113	9	151	44
Fat	84	47	89	26	110	39	108	27	134	55	138	38	99	10	116	30
Carbo	321	166	374	118	514	140	511	108	491	145	570	195	365	85	460	140

4 Discussion

Optimal sports performance is not only determined by physical aspects but also involves psychological and nutritional dimensions that play a crucial role in achieving maximum athlete performance. This research aims to conduct an in-depth analysis of the psychological and nutritional aspects of athletes competing in the Provincial Sports Week (PORPROV) in Semarang City in 2023. The importance of understanding psychological factors in athletes cannot be overlooked, considering that these aspects can influence concentration, motivation, and emotional stability during competition. Meanwhile, optimal nutrition serves as a crucial foundation for enhancing endurance, recovery, and athlete performance during training and competition.

This study will involve data collection through various research methods, including interviews, questionnaires, and direct observation of athletes participating in PORPROV 2023. The collected data will be analyzed holistically, highlighting the

interaction between psychological and nutritional factors in the context of athletic performance.

The expected outcome of this research is to provide a significant contribution to a better understanding of how psychological and nutritional factors can be optimized to support the improvement of athlete performance. The implications of these findings are anticipated to serve as a foundation for the development of training strategies and holistic approaches to support athletes in achieving their peak performance in the PORPROV Semarang City 2023 event.

5 Conclusion

In conclusion, this research endeavors to deepen our understanding of the intricate interplay between psychological and nutritional factors influencing the optimal performance of athletes participating in the Provincial Sports Week (PORPROV) in Semarang City in 2023. Acknowledging that peak athletic achievement transcends mere physical capabilities, the study underscores the pivotal roles of psychology and nutrition in shaping an athlete's success. The significance of comprehending psychological aspects becomes apparent, as these factors intricately impact concentration, motivation, and emotional stability during competitive endeavors. Simultaneously, optimal nutrition emerges as a cornerstone, providing essential support for enhancing endurance, facilitating recovery, and optimizing overall athletic prowess throughout training and competitions. Employing a comprehensive data collection approach, including interviews, questionnaires, and direct observations, the research aims to holistically analyze the complex dynamics between psychological and nutritional elements in the context of athletic excellence. The anticipated outcomes hold the potential to offer valuable insights, shaping targeted training strategies and holistic approaches to empower athletes in reaching their peak performance levels during the upcoming PORPROV Semarang City 2023 event. Ultimately, this research strives to contribute to a more nuanced comprehension of the multifaceted factors influencing athletic success, fostering advancements in training programs and comprehensive athlete support systems.

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