



The Relations of Knowledge and Attitude Towards Anaemia Among Petanque Athletes

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ABSTRACT

Anaemia causes athletes to tire easily and decrease fitness due to physical activity, exercise, physiological and psychological stress, and environmental conditions. This study aimed to evaluate the knowledge and attitudes towards anaemia of petanque athletes in Makassar. A cross-sectional descriptive study, using a questionnaire, was conducted on thirty petanque athletes in Makassar. Descriptive statistics were used to elaborate on the demographic characteristics, knowledge, and attitude's respondents. Pearson correlation was used to identify the relationship between variables. Seventeen (56.7%) male respondents with an average age of 21.53 ± 4.13 years and thirteen (43.3%) female respondents with an average age of 20.08 ± 2.12 years. There are 46.7% have moderate and 36.7% have poor knowledge about anaemia. Almost respondents (96.7%) have a slightly positive attitude regarding anaemia. A significant and positive correlation between knowledge-attitude ($r=0.317$, $p<0.05$) was observed. Conclusion: There is a significant relationship between knowledge and attitudes related to anaemia in petanque athletes. The positive and significant correlation reaffirms that better knowledge can lead to positive attitudes. This will further assist in the prevention and management of anaemia in sports. Therefore, an extensive health and sports education campaign should be provided to the general athlete population and petanque athletes.

Keywords: *Anaemia; Attitude; Knowledge; Petanque Athlete.*

INTRODUCTION

Nutrition is an important factor in the performance and health of athletes. Nutrition is an important component of any athlete's activity program. High levels of nutritional knowledge and a positive attitude can lead to improved performance and health of an athlete. Therefore, knowledge about nutrients and how the body uses nutrients and their relationship to performance and fitness is important. One disease that affects the performance of many athletes is anaemia.

The World Health Organization (WHO) (2004) defines anaemia as a condition in

which haemoglobin (Hb) in the blood is below normal, as a result of a deficiency of one or more nutrients, especially iron. Iron deficiency can reduce myoglobin levels and this causes a decrease in muscle aerobic capacity. Thus, athletes often experience decreased performance. Iron deficiency is one of the most common nutritional deficiencies in the world. Adolescents and women who are menstruating are the groups that suffer the most from iron deficiency. Based on the results of the Indonesia National Basic Health Research in 2018, the prevalence of anaemia in adolescents is 32%, meaning that around 3 out of 10 adolescents in Indonesia suffer from anaemia. In sports, rates of iron deficiency are higher, up to over 50% in female adolescent athletes, and are more common in endurance sports with eating disorders (Sandstrom et al., 2012; Lantunde-Dada, 2012; Dubnov et al., 2006). These cases will affect not only oxygen transport but also many organ systems of the body (Cippa and Krayenbühl, 2014).

Nutritional problems, especially anaemia can affect athlete performance. This study was conducted to evaluate the relationship between knowledge and attitudes towards anaemia in South Sulawesi petanque athletes in Makassar City.

METHOD

The research was a cross-sectional study. The respondents of this study were petanque athletes in Makassar who were willing to become respondents after explaining informed consent and obtained 30 respondents. Knowledge and attitude data were collected using a questionnaire consisting of three parts characteristic data, knowledge about anaemia, and attitudes towards anaemia. All Questionnaires were administered at the training centre. Respondents were asked to answer on the spot and collected after answering. Descriptive statistics are used to explain the data on the characteristics of the respondents. Categorical variables are measured in percentage terms and mean \pm standard deviation. One-tailed Pearson correlation was used to assess the relationship between research variables. The significance value used for the correlation test is $p < 0.05$.

RESULTS AND DISCUSSION

Characteristics of respondents

A total of 30 questionnaires were distributed to respondents who were willing to be involved as shown in Table 1. Half of the respondents were aged 16-20 years with 15 (50%). The average ages of male and female athletes were 21.53 ± 4.13 years and 20.08 ± 2.12

years, respectively. Gender distribution is not much different between 17 male athletes (56.7%) and 13 female athletes (43.3%)

Table 1.
 The Characteristics of Respondents

Characteristic	n	%
Age		
16-20	15	50
21-25	13	43.4
26-30	1	3.3
31-35	1	3.3
Sex		
Male	17	56.7
Female	13	43.3

Knowledge about anaemia

Table 2 shows the respondents' responses to anaemia knowledge. Knowledge was assessed with questions focusing on anaemia aetiology, signs, symptoms, treatment, and management. Each answer is given with a score of 1 for the correct answer and 0 for the wrong answer. The question score range is 100 (maximum) if the respondent can answer all questions correctly to 0 (minimum) if he cannot answer all questions correctly. A cutoff value of ≤ 55 is categorized as poor, and 56-75 is categorized as fair, whereas if a value of ≥ 76 respondent is considered to have a good knowledge of anaemia.

Table 2.
 Distribution of respondents based on knowledge about anaemia (n=30)

Categories of Knowledge	n	%
Good	5	16.7
Fair	14	46.7
Poor	11	36.7

Out of a total of 30 respondents, 14 (46.7%) had sufficient knowledge about anaemia and 11 (36.7%) had insufficient knowledge about anaemia. Respondents who have good knowledge only 5 (16.7%). The results of this study indicate that respondents do not have adequate information about anaemia. Several studies have reported that good knowledge of nutrition positively contributed to good practices such as a high intake of fruits, vegetables, and carbohydrate-rich foods (Alaunyte et al., 2015; Asakura et al., 2017; Spronk et al., 2015). Leonard et al., (2014), also found that knowledge about iron food sources was positively related to dietary iron intake.

Attitude towards anaemia

Table 3 shows the distribution of respondents' attitudes towards anaemia. Attitudes were assessed by giving eleven statements. Each statement is designed as a positive or

negative attitude. Each statement was given a choice with five scales, namely strongly disagree, disagree, neutral, agree, and strongly agree. Scores of 1 to 5 were given strongly disagree to strongly agree for positive statements while 5 to 1 were given strongly disagree to strongly agree for negative statements. The question score range is 100 (maximum) if the respondent chooses the maximum scale for each question to 0 (minimum) otherwise. Only one respondent (3.3%) had a positive attitude and almost all 29 respondents (96.7%) had a positive attitude towards anaemia.

Table 3.
 Distribution of respondents based on attitude towards anaemia (n=30)

Categories of Attitude	n	%
Positive	1	3.3
Slightly Positive	29	96.7
Negative	0	0

Table 4. Shows the distribution of respondents according to the statement points given. The results showed that the majority of respondents did not choose the scale strongly agree with positive statements and vice versa. Singh et al. (2109) found that adolescent girls' knowledge in Delhi, India is not adequate and has an impact on their practices and attitudes.

Table 4.
 The distribution of respondents based on the attitude questions (n=30)

Characteristic	n	%
If I take iron tablets, my academic and sports achievements will increase		
Strongly disagree	1	3.3
Disagree	2	6.7
Neutral	15	50.0
Agree	8	26.7
Strongly Agree	4	13.3
If I suffered from anaemia, I will easily get tired		
Strongly disagree	0	0.0
Disagree	0	0.0
Neutral	4	13.3
Agree	20	66.7
Strongly Agree	6	20.0
I am at risk of anaemia if I have worms infested or malaria		
Strongly disagree	1	3.3
Disagree	8	26.7
Neutral	8	26.7
Agree	11	36.7
Strongly Agree	2	6.7
Menstruation makes women more at risk of developing anaemia		

Characteristic	n	%
Strongly disagree	1	1
Disagree	8	8
Neutral	7	7
Agree	14	14
Strongly Agree	0	0
If I exercise heavily, then I risk suffering from anaemia		
Strongly disagree		
Disagree	1	3.3
Neutral	8	26.7
Agree	7	23.3
Strongly Agree	14	46.7
	0	0.0
If I take iron tablets once a week, I won't suffer from anaemia		
Strongly disagree	1	3.3
Disagree	7	23.3
Neutral	8	26.7
Agree	11	36.7
Strongly Agree	3	10.0
If I eat enough rice, it will reduce the risk of anaemia		
Strongly disagree	2	6.7
Disagree	10	33.3
Neutral	11	36.7
Agree	5	16.7
Strongly Agree	2	6.7
If I eat animal-source food regularly, the risk of developing anaemia will decrease		
Strongly disagree	0	0.0
Disagree	1	3.3
Neutral	10	33.3
Agree	16	53.3
Strongly Agree	3	10.0
If I drink coffee and tea it will help increase the absorption of iron in my body		
Strongly disagree	0	0.0
Disagree	5	16.7
Neutral	14	46.7
Agree	11	36.7
Strongly Agree	0	0.0
If I take iron tablets, my blood pressure will increase		
Strongly disagree		
Disagree	1	3.3
Neutral	13	43.3
Agree	14	46.7
Strongly Agree	2	6.7
	0	0.0
If I have anaemia, my body's fitness decreases		
Strongly disagree	0	0.0
Disagree	0	0.0
Neutral	6	20.0
Agree	17	56.7
Strongly Agree	7	23.3

Most of the respondents chose the agreed scale for statements related to the consequences of anaemia. As many as 17 (56.7%) agreed with the statement "If I have anaemia, my body's fitness is reduced" and as many as 20 (66.7) for the statement "If I have anaemia, I will get tired easily". Likewise for the statement about the causes of anaemia "If I drink coffee and tea it will help increase the absorption of iron in my body" as many as 11 (36.7%) still agreed with this statement and there no respondents who strongly agreed with the statement "Menstruation makes women more at risk for anaemia. This study shows that still, a small number of respondents have a positive attitude towards anaemia. The same result was found by Abu-Baker et al. (2021) where most of their respondents consumed caffeine, which inhibits iron absorption, and they also were not confident about preparing iron-rich food. Another previous study reported that adolescents in Jordan, Palestine, and Iran have poor knowledge, attitudes or practices regarding iron deficiency anaemia (El-Qudah, 2014; Jalambo et al., 2017a; Tiyyuri et al., 2017).

The Correlations of Knowledge and attitude towards anaemia

The correlation in this study was interpreted using the following criteria: 0–0.25 as a weak correlation, 0.25–0.5 as a moderate correlation, 0.5–0.75 as a good correlation, and greater than 0.75 as a very good correlation (Cohen, 1988). The correlation shows a significant positive linear correlation between knowledge and attitude ($r = 0.317$, $p < 0.05$). The results reconfirm the relationship between knowledge and attitudes towards anaemia as shown in Table 5.

Table 5.
The Correlations of Knowledge and attitude towards anaemia

Variable	Correlation Coefficient	p-value
knowledge - attitude	$r = 0.317$	0.044

This shows that many athletes have inadequate knowledge about anaemia which affects the attitude of the respondents. Many factors can influence the lack of knowledge of respondents about anaemia, including lack of information, lack of clarity of information, and the lack of ability of respondents to understand the information received. Knowledge about anaemia can be increased through means of information and communication both from books and social media. Besides that, it can also be obtained through health seminars, especially in the field of sports. Most adolescents also have less knowledge and attitudes about the causes, effects, and prevention of anaemia. The results are consistent with other studies conducted in India among adolescents (Kakkar et al., 2019; Melwani et al., 2018).

Knowledge can affect the attitude of a person. There is a relationship between nutritional knowledge and attitude. This statement is supported by several studies showing that nutritional knowledge and attitudes are positively correlated (Azizi et al. 2010; Hornstrom et al. 2011). The more knowledge about nutrients the greater the positive attitude towards nutrients.

CONCLUSIONS AND SUGGESTIONS

Knowledge plays a very important role in increasing the positive attitude of athletes towards anaemia. Optimal performance and fitness are often compromised due to anaemia. The research results showed that the respondents' knowledge about anaemia was still in the sufficient category and their attitudes tended to be positive towards anaemia. It is therefore important to educate athletes and coaches about sports nutrition. It helps to increase Knowledge and Attitude about

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