Original Article

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The contribution of students' psychological conditions in achieving basketball learning outcomes

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Abstract: A person's ability to perform motor movement tasks based on his awareness and psychological state is always interesting to discuss. This also applies to basketball sports activities in the school environment both within the scope of physical education and extracurricular activities. This research aims to accurately determine the relationship between cognitive anxiety, somatic anxiety, and self-confidence with the results of the free throw shot in basketball. The population of this study was basketball student-athletes totaling 42 people, 24 men and 20 women (± 17 years old), and this research study was conducted after school time ended. The instrument used in this research was the form of questionnaire to measure the level of anxiety with the Competitive State Anxiety Inventory-2 (CSAI-2) questionnaire created by Martens, Vealey, and Burton (1990) which consists of 27 questions including Cognitive State Anxiety, Somatic State Anxiety, and Self-Confidence. The research data results were then processed using descriptive and inferential correlational statistical techniques. The research results show that the cognitive anxiety and free throw, and the somatic anxiety and free throw both correlation test results have an insignificant value with the correlation data obtained as of p .471 and p .661. The results of the correlation test between self-confidence and free throw have an insignificant value with correlation data results p .642, all the correlation tests are within the significance level of α.05.This study shows that there is a relationship between cognitive anxiety, somatic anxiety, and self-confidence regarding the results of free throw shooting in basketball, but there is no significant relationship between cognitive anxiety, somatic anxiety, and self-confidence towards the results of free throw shot.

Keywords: cognitive anxiety, somatic anxiety, self-confidence, basketball, physical education

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INTRODUCTION

Basketball is a sport that currently is very popular and growing rapidly both in the world of recreational sports and for achievement purposes, which can be played by anyone, including those with special needs (Tsunoda et al., 2021). The game of basketball is a big ball sport that is played in groups(Bazanov & Rannama, 2015), where there are 2 teams with 5 people in each team, this sport has now become very popular in various parts of the world, and there are many fans of this sport ranging from men and women, even children to adults. The game of basketball itself has many benefits to be gained, apart from physical ability(Vera et al., 2020), mental and social well-being and teaches the values of teamwork(Fatahillah, 2018). Basic technical skills are important for every player to have, tactical ability in playing because it really influences the performance of the game so that it can run well(Erčulj et al., 2010). Just like in games and competitions, the basic techniques that a person has are the initial capital that is important to know in the learning process. When the trainer or teacher knows the basic abilities, the trainer or teacher can easily provide appropriate formulations and methods so that learning and training achievement targets are met.

In previous research on the sport of basketball(Devita, 2013) revealed that an average level of basic technical skills in playing basketball (passing, dribbling and shooting) in a player's condition and good technical skills can influence students' performance so that they are able to face opponents in match conditions and situations effectively and efficiently. Throwing technique is a technique that must be mastered by basketball students(Reliana & Herdyanto, 2020). In the game of basketball itself there are several basic shooting techniques. The shooting techniques that are often used by basketball players in basketball matches are the Set Shoot and Jump Shoot techniques. This technique is often used because match conditions require it to be used(Safitri, 2017). Meanwhile, one of the goals of the game of basketball is to prevent the opponent from scoring points or numbers, then get points by putting the ball into our opponent's ring and we try to score as many points as possible into the opponent's ring(Novan & Tuasikal, 2019). Free-throw Shot is a type of shot that is still categorized as the easiest shot which also has advantages for the players, namely, the player takes the shot without an opponent blocking or blocking, on this occasion the player has time to control himself so that he remains calm and thinks clearly. To make a free throw, the difference between the player and the ring is close, namely, 15 feet from the ring to the shot spot, and this free throw should really help the player to score(Reliana & Herdyanto, 2020).

However, it is not only tactics and techniques that must be paid attention to, students' mental strength must also be supported in the training process, because mental health has a big influence on students' performance in matches. The psychological condition of a player when taking a free throw is seen to influence the ability and accuracy of the shot taken. Theoretically, negative psychological variables will be inversely proportional to the achievement of free-throw shooting skills and vice versa, positive psychological conditions are considered to contribute to the success of these skills. The level of accuracy of free-throw ability itself greatly influences the team's scoring ability, which certainly influences the chances of winning in a match(Simović et al., 2012). A person's psychological condition is considered to influence basketball performance, because a person's psychology has a big influence on a student's potential in competing. Sports psychology itself is a science that studies mental phenomena related to sports activities. Specifically, regarding mental training, it is more focused on actions or treatment to improve a person's psychological condition(Sukirno, 2012), which is as important as physical exercise(Arazi & Asadi, 2011).

In line with the development of time and the need for psychology in sports, sports psychology was developed and applied. One of the limitations and definitions of sports psychology was stated by John D. Lawther, a professor of physical education from Pennsylvania State University, namely "Sport psychology is the study of human behavior in sports situations. It focuses on both learning and performance, and considers both participants and spectators", which can indirectly mean that sports psychology is a science about human behavior in controlling themselves when doing sports.

The focus of the study is on learning and performance and considers both the perpetrator and viewer (Sumarjo, 2017). One of the psychological conditions that is considered not good for a person is the condition of anxiety, or anxiety. Anxiety itself is a condition where mental health requires treatment. Cognitive anxiety itself is a student's subjective perception which is closely related to the assessment of competitive situations followed by somatic responses (Kumbara et al., 2018). Treatment of generalized anxiety disorder can be characterized by persistent worry about feelings of concern in large or small forms (Jiwo, 2012). Anxiety in all situations, especially during matches, is a condition experienced by almost all individuals, only the levels and levels are different (Hossein et al., 2016). In general, anxiety is a negative emotion that begins with fear and low self-esteem and progresses to self-doubt. Anxiety is classified into state anxiety and trait anxiety. State anxiety occurs suddenly and

without warning; for example, a tennis player will experience this type of anxiety if the environment changes. Normally, someone who practices tennis can control their emotions, but a deep sense of worry arises when the assessment test is given. The term "anxiety symptoms" is in the category of anxiety that is being felt. Different from the nature of anxiety, this anxiety is inherent and is an existing character of a person. For example, someone may have feelings of worry when faced with a graduation exam. This anxiety is a chronic condition. These two problems must be addressed by coaches and teachers in their capacity as teachers because they can interfere with the performance of pupils or students in the field.

Several studies show that anxiety is a psychological component that can affect a person's performance in a match. Uncontrolled nervousness will hinder a person's performance because his performance will be less than optimal. That's why anxiety often becomes a problem for students because they feel they can't overcome their anxiety, which ultimately affects their mental health, stamina, and performance in carrying out sports activities. Anxiety and fear have the same physiological components, but anxiety is not the same as fear (Setiyani, 2018). Anxiety often has internal causes, and the source is largely unknown, while fear is an emotional response to a threat or danger whose source is usually external and is faced consciously.

There are two types of anxiety, namely cognitive anxiety and somatic anxiety (Rohmansyah, 2017). Cognitive anxiety is usually characterized by a feeling of anxiety and fear about something that will happen, cognitive anxiety can also be interpreted as something related to what the student or person thinks, namely anxious thoughts when they are about to do something, while somatic anxiety is characterized with a measure of the level of physical activity felt, it could also be physiological changes related to the emergence of feelings of anxiety. As an example, suddenly sweating, feeling like you want to urinate continuously, you can also get dizzy, your mouth feels dry and so on. According to previous research, the higher the mental toughness that students with disabilities have in facing competitions, the lower the level of competitive anxiety they experience (Magfiroh & Jannah, 2022) and (Hossein et al., 2016). The level of anxiety experienced by Papua National Sports Week (PON) students is at a medium level with the highest dimension being cognitive anxiety. Likewise, the level of aggressiveness is at a medium level with the highest dimension being verbal aggression as revealed by (MF Dongoran, E Lewar, 2020) or also due to injury factors (Baker et al., 2020).

Apart from cognitive and somatic anxiety, there is something that also influences student performance, namely self-confidence. Self-confidence is one of the variables most related to

sports performance. Self-confidence means a person's confidence in controlling themselves and their environment; the perceived ability to improve anger management and provide the possibility that a person can use their emotions appropriately to achieve goals in sport. It also prevents students from giving in to destructive anger and aggressiveness as one of its manifestations in a competitive setting (Mowlaie et al., 2011a). Sports self-confidence (self-confidence in sports) which means self-confidence applied in sports situations. Self-confidence is consistently believed to be a very important influence in achieving student performance. All coaches consider self-confidence as a dominant trait that greatly determines the quality of performance in sports. Psychologists describe self-confidence as a dimension of self-awareness that is reflected in a person's belief in possessing the qualities that make him competent to always have full control over the results of his activities, to adapt them to what he values and considers desirable (Kostovski & Saiti, 2014).

Empirical research has shown that in students, high levels of self-confidence are associated with abilities that are perceived as useful in competition. Self-confidence also moderates anger symptoms in competition, facilitating doping resources to deal with anxiety and leading to the maintenance and continuation of control during competition (Besharat & Pourbohlool, 2011). Previous research results show that self-confidence has a significant negative correlation with anger and a significant positive relationship with sports performance and can have a mediating influence in the relationship between anger and anger control and sports performance. Statistical analysis of the data characterized that increasing the level of self-confidence decreases the relationship between anger and anger control with sports performance. This mediation effect is partial for anger and complete for controlling the anger experienced by a person (Mowlaie et al., 2011b). According to (Ghufron & Risnawita S, 2010), Self-confidence is a personality trait that means belief in oneself. Everything that takes the form of personality in believing in one's own abilities or skills is included in self-confidence, self-confidence cannot be done by itself, it must be done through training and forming positive thoughts to create self-confidence within oneself.

MATERIAL AND METHOD

Participants in this research were 45 students who took part in junior high school basketball extracurriculars (±15 years old). The population in this study was 45 students who took part in extracurricular of basketball. The sample in this study used total sampling or

saturated sampling, that is, the entire population was sampled, which also consisted of 45 students. The instrument used in this research was 25 items of questionnaire.

The design used in the research is a correlational quantitative descriptive research method with correlational data processing techniques. The research is intended to determine the relationship between one variable and another, namely the relationship between levels of cognitive, somatic and self-confidence anxiety and basketball learning outcomes. This research design functions to provide the path and direction of the research process.

To measure the level of anxiety, the Competitive State Anxiety Inventory-2 (CSAI-2) questionnaire created by Martens, Vealey, and Burton (1990) is used, which consists of 27 questions including Cognitive State Anxiety, Somatic State Anxiety and Self-Confidence. Four ranges were used in this questionnaire, namely not at all, not very, quiet and very agree,

To measure the sample's ability of the free-throw shot, a dynamic 60-second free-throw shooting test has been taken in this test, the samples are instructed to take as many free-throw shots as accurately as possible without receiving any form of external pressure or stimulation, so that it is hoped that there will be no other variables that are considered to influence the test results

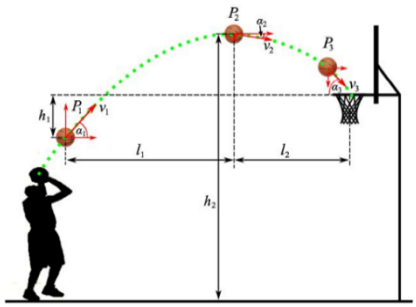


Figure 1. Implementation of the free-throw shot test.

The steps for the dynamic 60-second free-throw shooting test are as follows:

1. Samples are prepared in the waiting area.
2. The tester briefly explains the test stages to the test takers.
3. The sample stands at the ball throwing point.
4. The sample immediately throws the ball towards the ring as many times as possible within 60 seconds according to the tester's instructions.
5. The number of incoming balls is counted as the total test score.
6. The number of incoming balls is counted as the total test score.

To determine the description of the research data and the relationship between the variables studied as well as the test of normality, the data obtained from psychology questionnaires and free-throw skills test results were then processed using Jamovi 2.4.5 software (Navarro & Foxcroft, 2022). The data test of normality gained from the Shapiro-Wilk test of normality and continued to the Pearson's correlation analysis.

RESULTS

This research reveals several things related to the correlation between psychological variables and the correlation between these psychological variables and free-throw shot skill ability. The total sample was 24 male samples and 20 female samples, with mean values for the psychological variables Cognitive Anxiety (CA), Somatic Anxiety (SA), Self-Confidence (SC), and Free Throw (FT) for male samples respectively of 24, 23.88, 24.63, and 2.63, while the average of the variables was the same for the sample. for women respectively 18.1, 20.45, 18.55, and 2.75. The Shapiro-Wilk test results show that each data is normal and can be continued through a parametric statistical process.

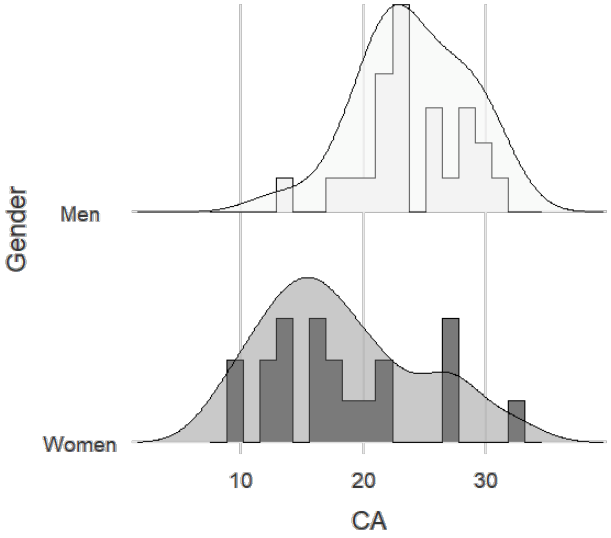
The descriptive data for this research can be seen in the table below.

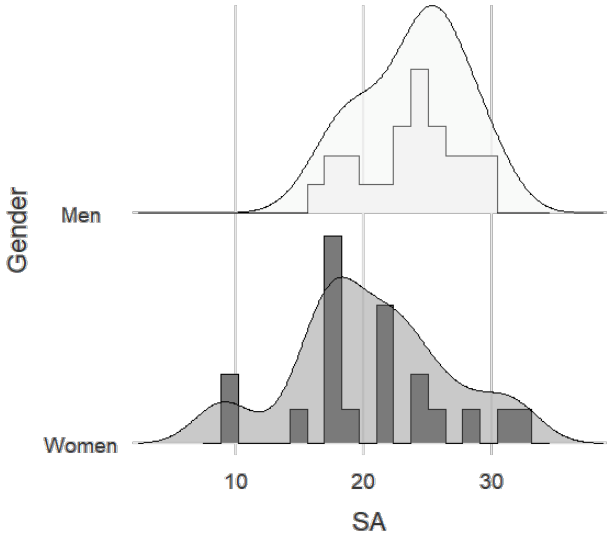
Table 1. Description of research data

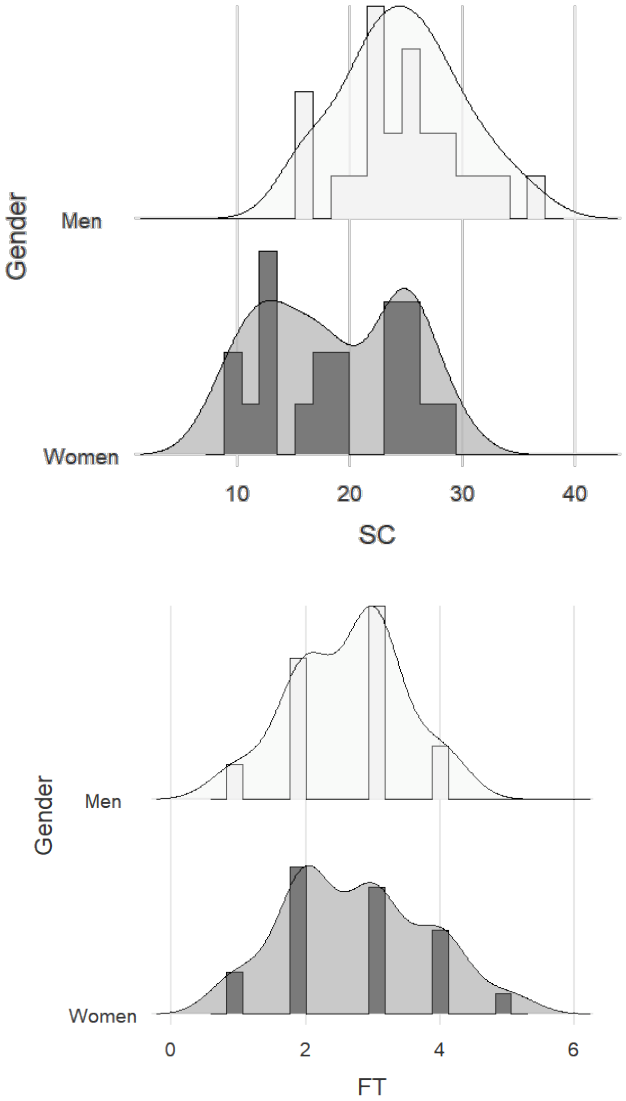
Variables	Gender	N	Mean	SD	Shapiro-Wilk P
CA	Man	24	24	±4,364	.36*
	Woman	20	18.1	±6,406	.297*
SA	Man	24	23.88	±3.96	.331*
	Woman	20	20.45	±6.126	.553*
SC	Man	24	24.63	±5,315	.681*
	Woman	20	18.55	±6,411	.11*
FT	Man	24	2.63	±0.824	.006*
	Woman	20	2.75	±1.07	.098*

*Significant at the level of α.005

A description of the research data for each variable based on the gender of the research sample can be seen in the graph below.


Gender
Men
Women
10
20
30
CA

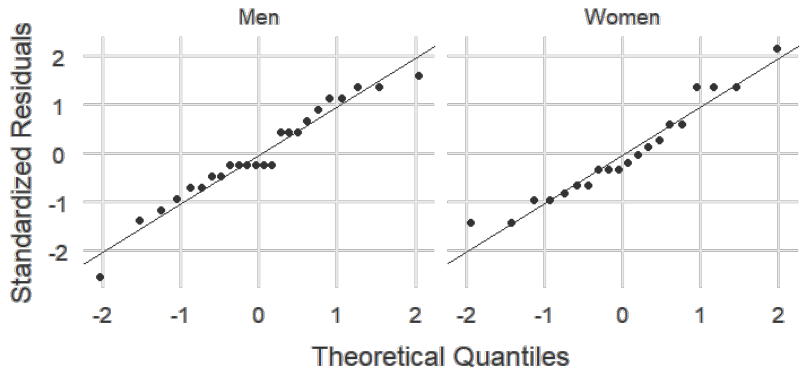

Gender
Men
Women
10
20
30
SA



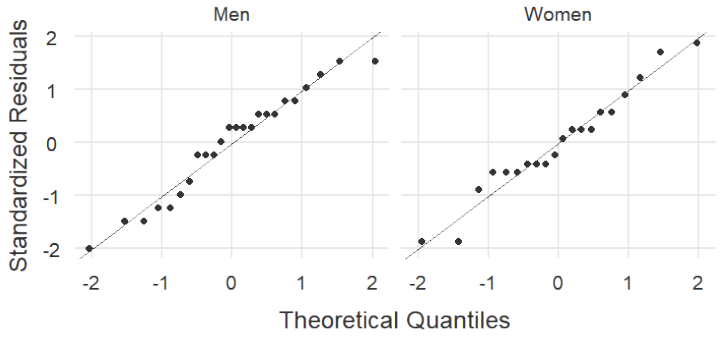
Graph 1. Histogram graph of research data

A description of the distribution of research data for each variable based on the gender of the research sample can be seen in the graph below.

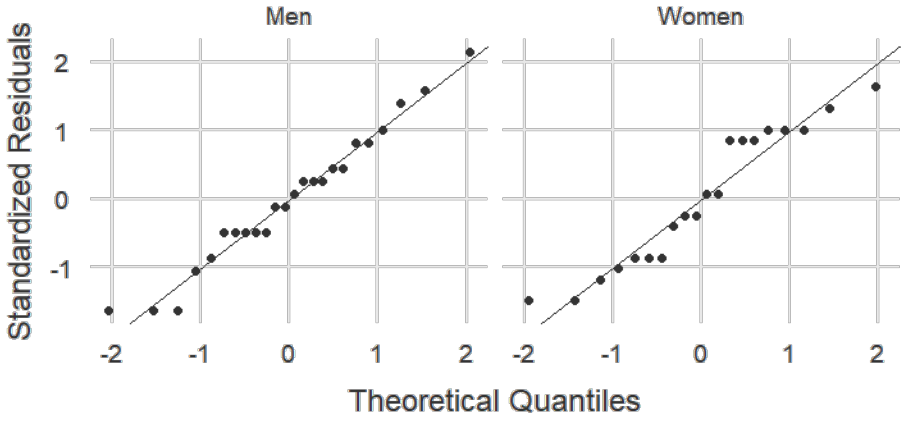
CA


Men
Women
Standardized Residuals
2
1
0
-1
-2
-2
-1
0
1
2
Theoretical Quantiles

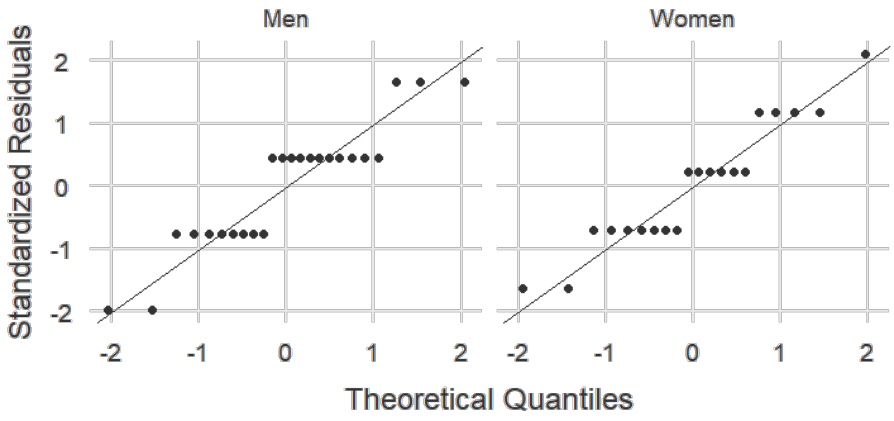
SA


Men
Women
Standardized Residuals
2
1
0
-1
-2
-2
-1
0
1
2
Theoretical Quantiles

SC


Men
Women
Standardized Residuals
2
1
0
-1
-2
-1
0
1
2
Theoretical Quantiles

FT



Graph 2. Distribution of research data

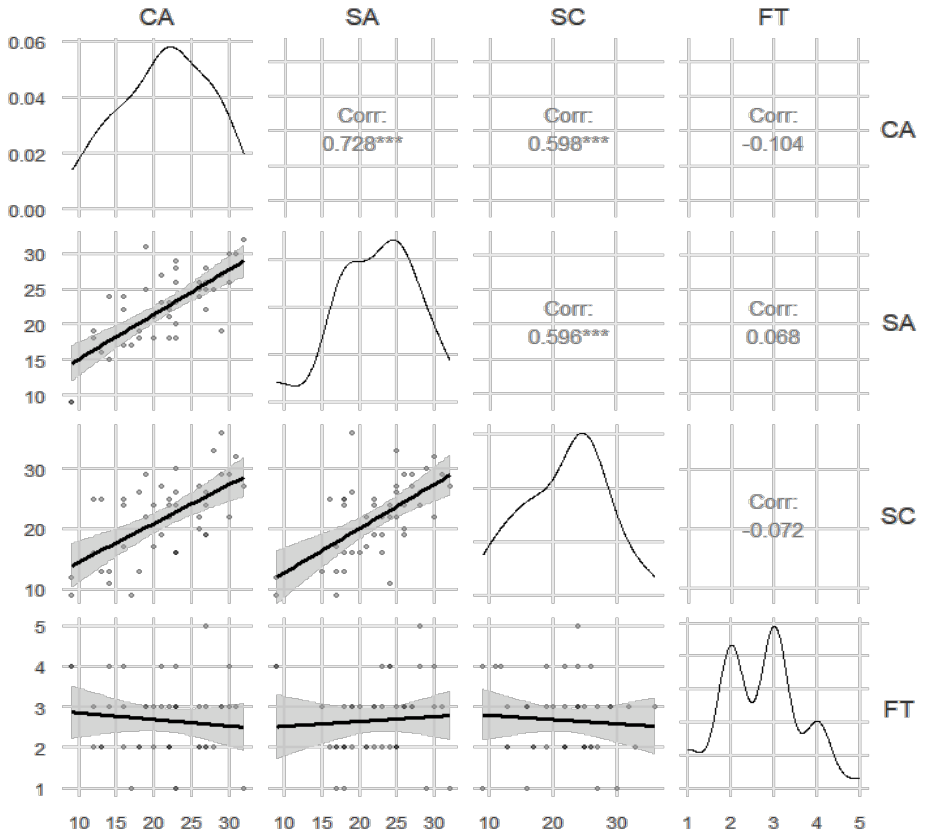
The correlation between psychological variables and their relationship to free-throw skill ability can be seen in the table below.

Table 2. Correlation matrix between research variables

		CA	SA	SC	FT
CA	Pearson's r	—			
	p-value	—			
SA	Pearson's r	.728***	—		
	p-value	< .001	—		
SC	Pearson's r	.598***	.596***	—	
	p-value	< .001	< .001	—	
FT	Pearson's r	-.104	.068	-.072	—
	p-value	.5	.661	.642	—

Note. * p < .05, ** p < .01, *** p < .001

Based on the results of inferential statistical calculations in the table above, we can draw several conclusions as follows. The results of the correlation test between the psychological variables CA and SA are significant at a p value <.001 with a Pearson's r value of .728. The results of the correlation test for the CA and SC variables were proven to be significant with p <.001 and a Pearson's r value of .598. The results of the correlation test for the SA and SC variables are significant with a p value <.001 and with a Pearson's r value of .596. All of these variables are correlated at the value α.001. The results of the Pearson correlation test between each psychological variable (CA, SA, and SC) on free-throw (FT) ability respectively are p .5 > α .05 CA to FT, p .661> α.05 for the correlation of SA variables with FT, and p .642 > α.05 for the SC variable against FT.



Graph 3. The plot of correlation matrix of each variable

Table 3. Model fit from regression test results of psychological variables on Free-Throw ability.

Model Fit Measures

Model	R	R^2	Overall Test F	Model df1	df2	p
1	0.247	0.061	0.633	4	39	.642

The results of the linear regression test and model fit of each psychological and free-throw variable in this study shown in the table above are a p value of .642, and an R2 value of .061, which means that the three psychological variables examined in this study, namely cognitive anxiety, somatic anxiety, and self-confidence together only contribute 6.1 percent to free-throw shot success.

CONCLUSION

From the results of correlation tests that have been carried out in this research to test theories, build facts, show relationships, and influences as well as comparisons between cognitive anxiety, somatic anxiety, and self-confidence variables with Free-throw Shot results in basketball games. There is a close relationship between the psychological variables cognitive anxiety, somatic anxiety, and self-confidence, but these variables do not have a significant relationship with free-throw shot skills in basketball because the results of the relationship test in this study have a small value, so there is no significant value between cognitive anxiety, somatic anxiety, and self-confidence regarding the results of the Free-throw Shot in the game of basketball. This can be caused by the small number of samples; the samples being studied do not have good abilities in doing Free-throw Shot.

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Conflicts of Interest: The authors declare no conflict of interest.

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