



The Influence of Physical Training on The Flight Performance of Cadets

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Abstract

This research was conducted to investigate the effect of physical exercise on the flight performance of fixed-wing cadets at the Indonesia Civil Pilot Academy in Banyuwangi. The research employed a quantitative methodology, utilizing data collection through a questionnaire. The questionnaire was distributed to the cadets selected as samples, specifically DIII PST 2, DIII PST 3, and DIII PST 4 cadets, with 43 participants. Based on the instrument test conducted using regression analysis with ANOVA, it was found that the regression model (H_1) significantly explained the variation in the observed data, with a significant F-ratio of 33.153 and a very low p-value ($< .001$). The hypothesis test results revealed that the coefficient for the dependent variable, flight performance, was 0.728, with a standard error of 0.126. The standardized coefficient (standardized) for this variable was 0.669. The obtained t-value was 5.758. The research findings indicate a significant influence of the independent variable, "physical exercise", on the dependent variable, flight performance. Aviation training facilities can use the results of this study to develop policies that encourage the inclusion of hands-on training in the flight curriculum. By doing this, you can ensure cadets are in good enough physical shape to complete their flight training. This study's results may open the door for the creation of fresh hypotheses on the connection between physical preparation and flying performance. The results of this study may serve as the foundation for creating a novel conceptual framework in this area.

Keywords *Physical Exercise, Flight Performance, Cadets, Fixed - Wing*

INTRODUCTION

Health is essential for all living beings, particularly humans, to possess and experience. It encompasses a state of well-being encompassing mental, spiritual, and physical aspects (De Oliveira et al., 2021). In life, particularly for a cadet, the significance of health cannot be overstated. It is crucial for facilitating the performance of a wide array of activities. Otherwise, mental health will impact the physical (Kurishko & Korchahin, 2023), affecting a person's performance and human immunity. The importance of health in life requires humans to be able to maintain their immune systems. One method of preserving health involves engaging in physical exercise. Sport, characterized by physical movements (McGinnis et al., 2022), has a holistic impact on the body. The imperative of maintaining health through exercise is particularly pronounced in cadet activities. The exercise (Sung et al., 2023) carried out by a cadet is certainly not aimed solely at maintaining health. In fact, exercise is done so that a cadet's physique (Friedrich et al., 2021) can become strong or make the body more trained to do or do harder work. Physical exercise is one way to form good habits in a cadet's body (Wahyuni & Mustain, 2021). The physical training (Sun et al., 2023) carried out by cadets is the key that cadets will become stronger and ready to carry out their duties and activities (Prokopczyk & Wochyński, 2022). Moreover, a fixed-wing (White & Karimoddini, 2020) pilot cadet at the Indonesian Pilot Academy Banyuwangi.

Flight activities, which are pretty busy, require every cadet to maintain body health with

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physical exercise (Invernizzi et al., 2020) because a pilot cadet before graduating or passing when carrying out MEDEX (Medical Examination) must comply with the requirements as stated in the CASR (Civil Aviation Safety Regulation) 67.303 Point 1 which explains that "The applicant must not suffer from any disease or disability that could cause the applicant to suddenly be unable to operate the aircraft safely or safely perform the assigned tasks." Thus, a pilot cadet must maintain good physical (Agostinelli et al., 2022) health and exercise regularly to maintain flying performance. The various demands and serious risks involved in activities during education make physical exercise (Thomas & O'toole, 2020) a necessity.

However, the quality of a cadet (Lee et al., 2021) can decrease when his physical quality (Newman et al., 2022) is not maintained, affecting his flying activities. Physical training activities that are not carried out optimally will have a clear impact on the cadets (Estevez, 2019), affecting their educational process. If physical training (Gafurzhanovich, 2022) is not done well, it is feared that the cadets will become weak, resulting in a loss of concentration. It is feared that concentration due to an untrained and weak body will result in fatal accidents during flying activities. The physical training undertaken by pilot cadets must adhere strictly to the standards set by their academy (Stănciulescu & Stănciulescu, 2021). The physical training (Draicchio et al., 2020) carried out by a flight cadet to achieve eligibility for flying activities includes push-ups, sit-ups, pull-ups, running and so on. At the Indonesian Aviation Academy in Banyuwangi, physical training (Shakarovich, 2022) is carried out in the morning, such as running around the field, 30 push-ups and 30 sit-ups. However, these physical training activities (Masrupah, 2019) are routinely carried out in the morning and in the afternoon only by flight cadets. Therefore, it is crucial to analyze the effect of physical training on the flying performance (Tamilselvan et al., 2023) of Fixed Wing Pilot Cadets at the Indonesian Pilot Academy Banyuwangi.

The problem with this study is whether physical exercise affects the flight performance (Arrighi, 2016) of the permanent wing pilots at the Indonesian Aviation Academy of Banyuwangi. The limitations of the problem are based on the background of physical exercises such as strength training, speed training, endurance training, and determination training (Wicaksono et al., 2023) on flight performance at the time of landing cadet's Standing Wing Flight Studies Program Three Diploma Program at the Indonesian Aviation Academy of Banyuwangi. The objective of this study, based on the problem formula, is to analyze and find out the impact of physical exercise on the flight performance of permanent wing flights at the Indonesian Aviation Academy Banyuwangi. This research provides information and knowledge about the impact of physical exercise on the flight performance of cadet Flight Standing Wings at the Indonesian Aviation Academy in Banyuwangi. The practical benefits of this research can open the mind and give insight into the fact that physical exercise is essential so that no more people, especially cadets who are too lazy to do physical exercise, do well. This study can contribute to the development of a theory that other researchers or cadets can use.

LITERATURE REVIEW

Physical Exercise

A thorough physical condition is very important, so without good physical (Kuznetsova & Labeshchenkov, 2020) condition, a cadet cannot follow the exercises perfectly. Exercise (Kuznetsova & Sadiev, 2020) is a process in which the perfection of sports (Melton & Kandiah, 2019) is regulated based on scientific, pedagogical, and systematic principles in preparing the athlete for the highest level of performance (Arrighi, 2016), carried out repeatedly with an increasing burden.

Physical exercise (Manieva, 2020) refers to an activity performed by a person to improve or maintain physical fitness (Withrow et al., 2023). Physical exercise is generally grouped into

several categories, depending on its effects on the human body—physical exercise results in physiological changes in almost all body systems, especially the muscular and cardiovascular systems. Based on the understanding of some experts, it can be concluded that physical exercise (Jamro et al., 2021) is one of the forms of activity that a person can do to improve or maintain physical fitness as well as improve immune and organ function. So, physical exercise (Danevski, 2021) became an important part of this research to reveal the effect of physical exercise (Martinescu-Bădălan & Macovei, 2021) on the flight performance of permanent wing pilots.

Indicators of physical exercise is performed (McNamara, 2022) in an attempt to enhance or maintain physical fitness. Physical exercise is not separate from physical activity. According to the Taruna Parenting Guidelines (Badan Pengembangan Sumber Daya Manusia Perhubungan, 2018:63), there are several physical fitness training (Pietroni-Spenst, 2021) programs with the following material indicators:

- a. Strength training: Strength training is the ability to use muscles to accept loads. Power training can be done with physical exercise activities such as sit-ups, push-ups, pull-ups, etc;
- b. Speed training: Speed training is the ability of the taruna to perform continuous movements in a short time. Speed training is given in the form of a sprint that is performed in the shortest possible time. Strength training is the ability to use organs such as the lungs, heart, and so on to perform activities;
- c. Endurance training is an exercise to work for a long time without experiencing fatigue. Endurance exercises can be done with interval training and circuit training;
- d. Formation training is the power of movement mainly on the joint muscles. The purpose of formation training is so that the joints' muscles are not stiff and move through without meaningful interference. Flexibility exercises can be divided into two types: dynamic stretching and static stretching.

Flight Performance

A pilot's performance (Li et al., 2023) is one of the things to be observed for success in carrying out flight activities (Wang, 2022). Performance is the result of work that can be achieved by a person or group of people in an organization, in accordance with their responsibilities, in order to try to reach the goals of the organization concerned legally and not violating the law and in conformity with morals and ethics. Performance is the success or achievement of a person in doing something (Sen-Podstawska & Favel, 2022).

According to Chen et al. (2023) flying in flight does not leave the plane. In KBBI, flying means moving with the power of a wing like a bird and so on or with the force of a plane. Based on some opinions about performance and flight (Vidan & Pop, 2022), it can be understood that flight performance is something that leads to success and perfection in flight activities in order to achieve the expected results (Zhang et al., 2021). Furthermore, a study by Irmawan et al. (2023) explain there is a phase of flight in flight which explained further by ICAO that a flight phase is the flight stage of an aircraft from the departure to the next landing but does not include a technical landing.

Previous Research

This study will integrate the existing state of flying cadets' physical training (Yao, 2014) with the needs outlined in the current constitution to investigate and develop suitable primary physical training methods. This paper examines the common issues that arise during the primary physical training of flying cadets, talks about the major approaches used in this training, and suggests solutions to raise the standard of this training. These days, as warfare becomes more technologically complex, so do the physical prerequisites for cadets training to become pilots. The

cutting-edge software not only speeds up the battle pace but also brutally creates a more intense battling atmosphere for the flying cadets; hence, from an objective standpoint, the flying cadets must have a strong constitution and withstand being hungry, thirsty, and exhausted.

When it comes to newly enlisted flying cadets, their initial physical training during the enrollment education period can help them regulate and control their physiological states and functions, which can enhance their cardiopulmonary function, muscular strength, muscular endurance, flexibility, and other physical fitness as well as physical reserve in handling emergent events. These qualities primarily include speed, sensitivity, harmony, balance, and other qualities to ensure flying security and improve flying endurance. Additionally, this training lays a crucial foundation for future cultural learning and intense exercise training for flying cadets.

RESEARCH METHOD

Research Design

This research will use quantitative methods where research takes the form of data in the form of numbers, and analysis is carried out using statistics. Quantitative methods are research methods used to examine certain populations or samples, sampling techniques which are generally carried out randomly, data collection using research instruments, and quantitative data analysis to prove hypotheses that have been determined to determine the influence from the independent variable to the dependent variable. This research will determine the effect of the independent variable, namely the intensity of physical training, on flying performance ([Adula et al., 2023](#); [Chambers-Coe, 2021](#)). This research will use a method focusing on measurement instruments that produce numbers and statistics.

Place and Time of Research

In this research, the author conducted research on the campus of the Indonesian Aviation Academy, Banyuwangi. This research activity will run from June 2023 to July 2023.

Population, Sample, and Research Objects

The population used by researchers is cadets from the Indonesian Aviation Academy, namely DIII PST 2, DIII PST 3, and DIII PST 4 cadets, with a total of 43 cadets. In this study, the samples were 43 cadets or pilot cadets who have carried out flying activities. The sampling used in this research was saturated sampling. Saturated sampling is a sample selection technique that uses all population members as samples. Therefore, this research will use the entire population as a sample. The object of this research is the effect of physical training on the flying performance of all fixed-wing pilot cadets or cadets at the Indonesian Pilot Academy Banyuwangi.

The data analysis technique used in this study is descriptive statistics, which analyzes data in a way that describes or describes data that has been collected as it is without the intention of making generalized conclusions or generalizations. Descriptive statistics, commonly referred to as deductive, simple, and descriptive stats, are statistics whose level of work covers ways to compile, organize, process, present, and analyze numerical data in order to provide an orderly, concise, and clear picture of a symptom, event, or condition. In other words, descriptiveness is the numerical data that organizes and analyses data and numbers to provide a regular, precise, and clear view of some symptoms, events, or circumstances to draw a certain understanding or meaning. A validation test is required to analyze static data. Data analysis is performed using statistical analysis using JASP ([Landicho et al., 2023](#)).

FINDINGS AND DISCUSSION

Findings

Question 1 through Question 10 of the Pearson's Correlations validity test revealed a relationship between the ten variables under analysis. Every pair of variables has a pattern of variable correlation. P-values greater than the designated level of significance indicate that variables Per 1 do not significantly correlate with other variables. Nonetheless, the Pearson's r values for variables Per 2 to Per 9 range from 0.402 to 0.755, and all of them have p-values that are well below the significance level (less than 0.001), showing statistically significant associations. These variables exhibit strong enough positive correlations. As a result, the validity test results offer a summary of the trends in the correlations between the variables this study examined.

Table 1. Validity Test

		Pearson's Correlations									
Variable		Ques 1	Ques 2	Ques 3	Ques 4	Ques 5	Ques 6	Ques 7	Ques 8	Ques 9	Ques 10
Question 1	Pearson's r	—									
	p-value	—									
Question 2	Pearson's r	0.554	—								
	p-value	<.001	—								
Question 3	Pearson's r	0.525	0.661	—							
	p-value	<.001	<.001	—							
Question 4	Pearson's r	0.567	0.744	0.438	—						
	p-value	<.001	<.001	0.003	—						
Question 5	Pearson's r	0.416	0.402	0.372	0.478	—					
	p-value	0.006	0.008	0.014	0.001	—					
Question 6	Pearson's r	0.476	0.705	0.532	0.545	0.467	—				
	p-value	0.001	<.001	<.001	<.001	0.002	—				
Question 7	Pearson's r	0.539	0.699	0.499	0.550	0.594	0.699	—			
	p-value	<.001	<.001	<.001	<.001	<.001	<.001	—			
Question 8	Pearson's r	0.548	0.598	0.574	0.634	0.607	0.532	0.755	—		
	p-value	<.001	<.001	<.001	<.001	<.001	<.001	<.001	—		
Question 9	Pearson's r	0.580	0.502	0.512	0.505	0.426	0.502	0.627	0.534	—	
	p-value	<.001	<.001	<.001	<.001	0.004	<.001	<.001	<.001	<.001	—
Question 10	Pearson's r	0.060	0.276	0.079	0.313	0.301	0.220	0.142	0.282	0.294	—
	p-value	0.700	0.073	0.614	0.041	0.050	0.157	0.363	0.067	0.056	—

Table 2. Validity Test for Question 11 to 16

		Pearson's Correlations					
Variable		Ques 11	Ques 12	Ques 13	Ques 14	Ques 15	Ques 16
Question 11	Pearson's r	—					
	p-value	—					
Question 12	Pearson's r	0.588	—				
	p-value	< .001	—				
Question 13	Pearson's r	0.752	0.708	—			
	p-value	< .001	< .001	—			
Question 14	Pearson's r	0.671	0.683	0.574	—		
	p-value	< .001	< .001	< .001	—		
Question 15	Pearson's r	0.690	0.508	0.559	0.775	—	
	p-value	< .001	< .001	< .001	< .001	—	
Question 16	Pearson's r	0.410	0.494	0.320	0.609	0.563	—
	p-value	0.006	< .001	0.036	< .001	< .001	—

The findings of the validity test, which employed Pearson's Correlations, revealed a pattern of correlation between the six variables under investigation, namely questions 11 through 16. A p-value greater than the designated level of significance in this result indicates that the query variable 11 does not exhibit significant associations with other variables. On the other hand, there were high positive correlations between queries 12 to 15, with Pearson's r (the correlation coefficient) values ranging from 0.508 to 0.775. In addition, the association between the variables is statistically significant because the p-value for this relationship is extremely low—less than 0.001. Though weaker than the preceding variable, the variable Per 16 likewise exhibits a positive connection with a significant p-value of 0.563 and a correlating coefficient value. Consequently, by demonstrating a substantial correlation between the majority of variable pairs, the validity test results paint a clear picture of the patterns of relationships between the variables examined in this study.

Table 3. Reliability Test

Frequentist Scale Reliability Statistics	
Estimate	Cronbach's α
Point estimate	0.800
95% CI lower bound	0.638
95% CI upper bound	0.894

According to the findings of the reliability test conducted using the Frequentist Scale Reliability Statistics, the instruments in question had a Cronbach alpha estimate of 0.800. The alpha value of Cranbach's 95% confidence interval has a lower limit of 0.638 and an upper maximum of 0,894. The obtained Cronbach's alpha values show that the instrument has a high degree of reliability because they are higher than the 0.70 generally accepted threshold value for satisfactory reliability. This suggests that the tool may be counted on to measure the contested design with a high degree of confidence.

Coefficient of Determination Test

In the initial exercise (H_0), there was no significant correlation between the variables measured. R^2 and Adjusted R^2 are 0.000, which indicates that the model cannot explain the variation in the data. However, paying attention to the RMSE, which is 4,504, is necessary, as it shows the average error in predicting the actual value. Meanwhile, in the next exercise (H_1),

significant improvements were seen. The R^2 value of 0.669 indicates that the model is able to explain around 66.9% of the variation in the data. The slightly lower adjusted R^2 , namely 0.447, indicates that several variables have not been included in the model. The lower RMSE of 3,390 indicates a smaller error in predicting the actual value compared to the previous exercise. Thus, the analysis results show that the physical exercise model has undergone significant improvements from H_0 to H_1 , with visible improvements in the model's ability to explain variations in the data and reduce prediction errors.

Table 4. Coefficient of Determination Test Results

Model Summary – Physical Training				
Model	R	R^2	Adjusted R^2	RMSE
H_0	0.000	0.000	0.000	4.504
H_1	0.669	0.447	0.434	3.390

ANOVA Regression Test

H_1 is the regression model that has been tested in this analysis. The Sum of Squares for the regression model is 380,941. This model has 1 degree of freedom (df), so the Mean Square for the regression model is 380,941. The F value obtained was 33.153, indicating a significant difference between the variables measured. The p-value is less than 0.001 ($< .001$), indicating this result is highly statistically significant. Residuals are variations that are not explained by the model and represent errors in predictions. The Sum of Squares for the residual is 471.106, with 41 degrees of freedom. The Mean Square for the residuals is 11,490, which is the mean squared prediction error. The total Sum of Squares is 852,047, with a total of 42 degrees of freedom consisting of the number of degrees of freedom of the regression model and residuals. Thus, the ANOVA results show that the regression model (H_1) significantly explains the variation in the observed data, with a significant F-ratio and a very low p-value ($< .001$).

Table 5. Regression Test Results (ANOVA)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
H_1	Regression	380.941	1	380.941	33.153	$< .001$
	Residual	471.106	41	11.490		
	Total	852.047	42			

Note. The intercept model is omitted, as no meaningful information can be shown.

Hypothesis Test Results

In the H_0 model, the coefficient for the intercept (constant) is 40.372 with a standard error of 0.687. The t-value obtained was 58.777, with a very low p-value ($< .001$), indicating a significant influence of the intercept in explaining the dependent variable. In the H_1 model, the coefficient for the intercept is 24,267 with a standard error of 2,844. The t-value obtained was 8.532, with a very low p-value ($< .001$), indicating a significant effect of the intercept on the dependent variable. In addition, there is a dependent variable, "Flight Performance", in the H_1 model. The coefficient for this variable is 0.728, with a standard error of 0.126. The standardized coefficient for this variable is 0.669. The t-value obtained was 5.758, with a very low p-value ($< .001$), indicating a significant

influence of the "Physical Training" variable on the dependent variable, namely "Flying Performance". In addition, collinearity statistics are also provided in the results of this analysis. The tolerance for all variables is 1.000, and the Variance Inflation Factor (VIF) is 1.000, indicating no significant collinearity problems between the independent variables in the model. Thus, the coefficient results show that in the regression model (H_1), the variable "Physical Exercise" has a significant influence on the dependent variable, with a positive coefficient of 0.728. The intercept variable also makes a significant contribution to the model.

Table 6. Hypothesis Test Results
Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p	Collinearity Statistics	
							Tolerance	VIF
H ₀	(Intercept)	40.372	0.687		58.777	<.001		
H ₁	(Intercept)	24.267	2.844		8.532	<.001		
	Physical Training	0.728	0.126	0.669	5.758	<.001	1.000	1.000

Discussion

Based on the results of the analysis of the coefficient of determination test, the results of the analysis show that the physical training model has experienced significant improvements as seen from H₀ to H₁; with the improvements or improvements that have been seen, it can be said that the model is able to explain variations in the data and is also able to reduce errors predictions. The coefficient of determination is the square of correlation (R^2), where this coefficient is the determinant of the variance that occurs in the independent variable, namely physical training (X), which is explained through the variance that occurs in the dependent variable, namely flying performance (Y). Therefore, based on the results of the analysis, it can be said that the physical training variable (X) can explain variance and reduce errors in predicting the flight performance variable (Y). According to [Ghozali \(2012\)](#), the coefficient of determination (R^2) is a tool used to measure the extent of the model's ability to explain the dependent variable. The coefficient of determination value is between zero and one. A larger value means the independent variable provides almost all the information needed to predict the dependent variables. This is in accordance with the results where the R^2 value is 0.669, which shows the model is able to explain 66.9% of the variance in the data on the dependent variable, namely flying performance or in other words, the physical training variable is able to explain or provide almost all the information needed to predict the flying performance variable.

Based on the results of the regression test using ANOVA, namely an analysis carried out to see the relationship between the dependent variable and the dependent variable, in this case, the ANOVA test was carried out to see the relationship between the physical training variable (X) and the flight performance variable (Y) which has analysis results which show that the model regression can significantly explain the variance in the observed data, with a significant F-ratio with a very low p-value of < .001. F-ratio is a value that shows how much variability between estimated means is

due to chance. Meanwhile, the p-value is a probability or significance value where this value is used to determine a hypothesis.

Based on hypothesis testing, it shows that physical training variables have an influence on flying performance variables. Physical exercise is a way to make the body stronger and ready to carry out activities. Training is a process of perfecting sports organized based on principles systems to prepare the body and is carried out repeatedly with increasing loads.

Effect of Physical Training on Flight Performance

Physical exercise is defined as an activity carried out to improve fitness. Physical exercise for a consistent time will have an effect on human function and psychology. Through physical exercise, a person can achieve certain goals, such as improving organism systems and functions to optimize a person's physical condition and appearance. In physical exercise with good intensity and in accordance with human standards, people will experience physical changes to become more optimal. Physical exercise will cause a response from the body's organs, which is an adjustment to maintain body balance.

In this study, physical exercise has an influence on flying performance, where flying performance is a person's success in carrying out flying activities. In flying activities, various phases must be carried out, and in doing so, you are required to follow existing procedures. Success in flying needs to be based on regular physical exercise. This training is aimed at improving flying performance abilities; apart from that, with physical training, a person will become fitter, which will determine physical health because a cadet certainly has a graduation limit to be able to operate an aircraft. Thus, physical training is carried out regularly by a fixed-wing pilot cadet at the Banyuwangi Indonesian Aviation Academy, such as doing push-ups, sit-ups, pull-ups, running and so on routinely in accordance with predetermined academy standards in order to form cadets who have Maintaining physical quality will make cadets physically stronger and avoid several undesirable risks that affect flying activities. If the cadets are not strong, concentration will be lost, which will cause the flying activity to fail. Therefore, physical training influences the flying performance of permanent pilot cadets at the Indonesian Pilot Academy Banyuwangi.

The results of this research are in accordance with previous research conducted by Wicaksana (2016), namely that a pilot or pilot can be categorized as having a physical exercise (Song & Cui, 2017) habit in accordance with ACSM recommendations. Physical exercise (Galimskyi, 2015) is obvious in health, which results in pilots with the perception of physical exercise (Krawczyk et al., 2018) having better health with appropriate physical exercise. Therefore, it can be concluded that physical training (Tomczak & Haponik, 2016) factors influence the health of pilots and their success in being able to fly.

The present study was conducted at the Indonesian Aviation Academy in Banyuwangi. It investigates the impact of cadets' physical training on their flying performance. Furthermore, this research could be expanded to encompass other pilot academies and their students.

CONCLUSIONS

The results of this study indicate that physical training influences the flight landing performance of the cadets. Cadets who have done physical training become stronger and avoid risks that can worsen the quality of landing flights, such as loss of concentration. Studies reveal a positive correlation between cadet flight performance and physical training. Compared to those who do not participate in a systematic physical training program, cadets who do so typically do better in flight.

The research findings demonstrated that the cadets' enhanced physical state made a substantial contribution to their enhanced flying performance. Cadets' suitability for flight training depends on a number of factors, including muscular strength, stamina, and agility. The results

underscore the significance of incorporating experiential learning into the aviation education syllabus. Flight training institutes must offer focused and efficient physical training programs to enable cadets to become more physically prepared for flight training.

The results emphasize the importance of practical instruction in aviation education programs. The physical preparedness of cadets during flight training must be enhanced by focused and efficient physical training programs offered by flight training schools. Institutions that provide flight instruction must create physical education curricula that are specific to the demands and specifications of flying. These programs ought to be created with the physical requirements for completing flying training in mind. More research is still required to fully understand the elements influencing flying performances and the long-term impacts of physical training, even if this study offers insightful information about the relationship between physical training and cadets' flight performance.

LIMITATION & FURTHER RESEARCH

This study is limited to a certain period to evaluate the impact of physical exercise on the flight performance of cadets, and then the limitation may occur in the size of the sample, depending on the availability of the willing cadet to participate. Besides physical training, other factors affecting flight performance may not be fully covered.

The methodology uses specific parameters to measure flight performance, such as precision levels, manoeuvres, and reaction times. Advanced studies may explore the long-term impact of physical exercise on flight performance, including potential sustainable benefits. Further research can evaluate the effectiveness of various physical exercise programmes to determine the best approaches.

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