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PSYCHOLOGICAL STATE OF PHYSICAL EDUCATION STUDENTS' AFFECTING THEIR PERFORMANCE IN A COLLEGE IN GUANGDONG, CHINA

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ABSTRACT

This study explores the impact of psychological states, specifically anxiety and self-confidence, on the performance of physical education students in a college in Guangdong, China. Employing a descriptive-correlational research design, the study analyzed data from 398 students using validated questionnaires with high reliability (Cronbach's alpha: anxiety = 0.971, self-confidence = 0.968). Results revealed a significant inverse relationship between anxiety and self-confidence ($r = 0.638$, $p < 0.001$), with higher self-confidence correlating to lower anxiety levels. The findings also indicated that anxiety levels negatively influenced performance, while the relationship between self-confidence and performance was complex, with high self-confidence not always leading to better outcomes. The study highlights the importance of integrating psychological support into physical education programs to foster optimal student performance. Implications include the need for targeted interventions, professional development for instructors, and personalized support systems. Future research should investigate longitudinal patterns, cross-cultural comparisons, and intervention effectiveness to further understand these dynamics.

KEYWORDS: *Psychological States, Physical Education Performance, Anxiety and Self-Confidence, Higher Education in China*

1. INTRODUCTION

The psychological state of students plays a crucial role in their academic and personal development, particularly in physical education settings where both mental and physical performance are intrinsically linked. Recent studies have highlighted the significant impact of psychological factors such as anxiety and self-confidence on student performance in physical education (Deasy et al., 2022). In China, where there is an increasing emphasis on physical education and sports programs, understanding these psychological dynamics becomes particularly relevant for educational institutions and practitioners. The complex interplay between mental states and physical performance creates unique challenges and opportunities for educators striving to optimize student learning outcomes in physical education environments.

The relationship between psychological states and performance in physical education has gained increased attention in recent years, with research indicating that students' mental well-being significantly influences their ability to engage effectively in physical activities and achieve optimal performance outcomes (Arabacı & Çankaya, 2017). This growing body of evidence suggests that psychological factors can either enhance or impede physical performance, making it essential for educators to understand and address these mental aspects alongside physical skill development. The integration of psychological support within physical education programs has become increasingly recognized as a crucial component for fostering comprehensive student development.

In the context of higher education, physical education students face unique pressures that can significantly impact their psychological well-being and subsequent performance. These pressures often stem from multiple sources, including academic expectations, physical performance standards, peer comparisons, and future career prospects. Understanding how these various factors interact and influence student performance is crucial for developing effective educational strategies and support systems. The college environment, with its increased emphasis on autonomous learning and professional development, presents both opportunities and challenges for managing student psychological states.

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The Chinese educational landscape has witnessed significant transformations in recent years, particularly in its approach to physical education. These changes reflect a broader recognition of the importance of holistic student development and the role of physical education in achieving educational objectives. However, the psychological dimensions of physical education in Chinese higher education institutions remain relatively unexplored, despite their potential significance in determining student success. This gap in understanding presents an important opportunity for research that can inform educational practice and policy.

This study focuses specifically on examining how anxiety levels and self-confidence affect the performance of physical education students in a college setting in Guangdong, China. By investigating these relationships within a specific institutional context, this research aims to contribute to the broader understanding of psychological factors in physical education while providing practical insights for educators and administrators. The findings from this study have the potential to inform the development of targeted interventions and support mechanisms that can help students better manage their psychological states and optimize their academic and physical performance.

2. LITERATURE REVIEW

The examination of psychological states affecting physical education students' performance necessitates a comprehensive theoretical foundation. Previous research has established multiple theoretical frameworks that help explain the complex relationships between psychological factors and academic performance. These frameworks provide essential insights into how students' mental states influence their learning processes and outcomes in educational settings. While various theoretical approaches have been applied to understand this relationship, two theoretical frameworks stand out as particularly relevant for understanding the psychological dynamics in physical education: Social Cognitive Theory and Information Integration Theory.

2.1 Social Cognitive Theory

Social Cognitive Theory (SCT), developed by Albert Bandura, provides a fundamental framework for understanding how psychological states influence learning and performance. The theory emphasizes the dynamic and reciprocal interaction between personal factors, behavioral patterns, and environmental influences (Bandura, 1997). In the context of physical education, SCT suggests that students' self-efficacy beliefs and anxiety levels significantly impact their performance outcomes. This theoretical framework has proven particularly valuable in explaining how students' psychological states interact with their learning environment to influence their academic achievements.

The core premise of Social Cognitive Theory lies in its understanding of human behavior as a product of continuous reciprocal interaction between cognitive, behavioral, and environmental influences. This triadic reciprocal determinism explains how students in physical education settings develop and maintain certain behavioral patterns through the complex interplay of personal factors, such as their thoughts and beliefs, and environmental circumstances, including peer influence and institutional support systems. The theory's emphasis on the role of cognitive processes in learning and performance provides valuable insights into how students' psychological states can either facilitate or hinder their educational progress.

A particularly significant aspect of Social Cognitive Theory is its explanation of self-regulatory mechanisms through which students monitor and adjust their behavior. Research has shown that students with higher levels of self-efficacy tend to demonstrate better performance and greater resilience in challenging physical education tasks (Richardson et al., 2022). This relationship between self-efficacy and performance is mediated through various psychological processes, including goal-setting, self-evaluation, and emotional regulation. Understanding these mechanisms is crucial for developing effective interventions to support students' psychological well-being and enhance their academic performance.

Social Cognitive Theory also emphasizes the importance of observational learning and modeling in skill acquisition. In physical education contexts, this aspect of the theory helps explain how students learn not only physical skills but also coping strategies and emotional regulation techniques from their peers and instructors. The theory suggests that students' psychological states are significantly influenced by their observations of others' experiences and outcomes, contributing to the development of their own self-efficacy beliefs and anxiety management strategies.

The application of Social Cognitive Theory in physical education settings has led to important insights regarding the role of environmental factors in shaping students' psychological states. The theory highlights how institutional culture, teacher-student relationships, and peer interactions can significantly influence students' anxiety levels and self-confidence. This understanding has important implications for educational practice, suggesting that interventions aimed at improving students' psychological states should consider both individual and environmental factors.

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2.2 Information Integration Theory

Information Integration Theory (IIT) provides a complementary perspective for understanding how students process and integrate various psychological factors affecting their performance. This theoretical framework offers a systematic approach to analyzing how individuals combine multiple sources of information to form judgments and make decisions in educational contexts. The theory's emphasis on cognitive processing and decision-making provides valuable insights into how students evaluate and respond to different aspects of their educational experience.

One of the fundamental principles of Information Integration Theory is its focus on how individuals weigh and combine different pieces of information to form overall impressions and make decisions. In the context of physical education, this theoretical framework helps explain how students integrate their anxiety experiences, self-confidence assessments, and performance feedback to regulate their behavior and academic engagement. This integration process is particularly relevant for understanding how students manage complex psychological states while participating in physical education activities.

Information Integration Theory also emphasizes the role of individual differences in information processing. Different students may assign varying weights to different aspects of their educational experience, leading to diverse psychological responses to similar situations. This understanding is crucial for developing personalized approaches to supporting students' psychological well-being and academic performance. The theory suggests that interventions should be tailored to account for individual differences in how students process and integrate information about their performance and capabilities.

The application of Information Integration Theory to physical education contexts has revealed important insights about how students combine multiple sources of feedback to form self-perceptions. This includes how they integrate formal performance assessments, peer comparisons, instructor feedback, and their own internal standards to evaluate their capabilities and progress. Understanding these integration processes is essential for developing effective feedback mechanisms that support positive psychological states and enhance learning outcomes.

A particularly valuable aspect of Information Integration Theory is its explanation of how students reconcile conflicting information about their performance and capabilities. The theory provides a framework for understanding how students manage discrepancies between their self-assessments and external feedback, which can significantly impact their psychological states and subsequent performance. This understanding is crucial for developing interventions that help students maintain healthy psychological states while processing potentially challenging feedback.

The practical implications of Information Integration Theory extend to the design of educational environments and assessment systems. The theory suggests that careful attention should be paid to how different sources of information are presented and structured to facilitate optimal integration and processing by students. This has important implications for how physical education programs are organized and how feedback is delivered to support positive psychological states and enhanced performance outcomes.

3. RESEARCH METHODOLOGY

The investigation of psychological states affecting physical education students' performance requires a carefully structured methodological approach that ensures both scientific rigor and practical relevance. The complexity of studying psychological factors in educational settings necessitates a comprehensive research design that can effectively capture and analyze the multifaceted nature of student experiences and performance outcomes. This study employed a systematic approach to data collection and analysis, incorporating both quantitative and qualitative elements to provide a thorough understanding of the relationships between psychological states and student performance.

3.1 Research Design

This study employed a descriptive-correlational research design to examine the relationship between psychological states and performance among physical education students. The research utilized quantitative methods to gather and analyze data regarding students' anxiety levels, self-confidence, and academic performance. This methodological approach was chosen for its ability to identify and measure relationships between variables while maintaining objectivity and reliability in data collection and analysis.

The research design incorporated multiple phases of data collection and analysis to ensure comprehensive coverage of the research objectives. The initial phase focused on establishing baseline measurements of psychological states, followed by systematic assessment of performance indicators and contextual factors that might influence the relationship between these variables. This multi-phase approach allowed for the identification of both direct and indirect relationships between psychological states and student performance.

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The design also included provisions for controlling potential confounding variables through careful sample selection and statistical analysis techniques. This attention to methodological rigor helped ensure that the findings would accurately reflect the relationships being studied while minimizing the influence of external factors that could affect the validity of the results.

3.2 Research Subjects

The study involved 398 physical education students from a college in Guangdong, China. Participants were selected using proportional stratified random sampling, with representation across different academic years and specializations. The sample included both male (74.1%) and female (25.9%) students, with the majority falling within the 20-21 age range (65.8%). This sampling approach ensured adequate representation of different student subgroups while maintaining the randomness necessary for statistical validity.

The selection of participants followed a carefully structured protocol that considered multiple demographic and academic factors. This included stratification based on academic year, program specialization, and previous academic performance to ensure a representative sample of the student population. The sampling frame was constructed using official enrollment records, with random selection within each stratum to minimize selection bias.

The participation criteria were established to ensure that all participants had sufficient exposure to the physical education program to provide meaningful data. Students were required to have completed at least one full semester of physical education courses and to be actively enrolled in physical education activities at the time of the study. This criterion helped ensure that participants had adequate experience to reflect on their psychological states in relation to their physical education performance.

The demographic composition of the sample reflected the broader student population of the institution, with particular attention paid to maintaining proportional representation across different specializations and academic levels. The relatively high proportion of male students (74.1%) is consistent with the general enrollment patterns in physical education programs at the institution.

The final sample size of 398 students was determined through power analysis to ensure adequate statistical power for detecting significant relationships while accounting for potential attrition during the study period. This sample size exceeded the minimum requirements for the planned statistical analyses and allowed for robust examination of subgroup differences.

3.3 Research Instruments

Data collection utilized validated questionnaires measuring anxiety levels and self-confidence. The anxiety assessment tool included 38 items evaluating various aspects of anxiety manifestation, while the self-confidence questionnaire contained 32 items measuring different dimensions of self-confidence. Both instruments demonstrated high reliability with Cronbach's alpha values of 0.971 and 0.968 respectively, indicating strong internal consistency and reliability.

The development and selection of research instruments involved a rigorous process of evaluation and pilot testing. The anxiety assessment tool was adapted from established psychological measurement scales, with modifications to ensure relevance to the physical education context. Each item was carefully reviewed by a panel of experts in sports psychology and education to ensure content validity and cultural appropriateness for the Chinese educational context.

The self-confidence questionnaire was similarly developed through a systematic process that included literature review, expert consultation, and pilot testing. The instrument incorporated multiple dimensions of self-confidence relevant to physical education performance, including academic self-efficacy, physical competence, and social confidence. The questionnaire items were designed to capture both general and domain-specific aspects of self-confidence.

The instruments were administered under standardized conditions to ensure consistency in data collection. Clear instructions were provided to all participants, and trained research assistants were available to address any questions or concerns during the administration process. The questionnaires were completed in a controlled environment to minimize external influences on participant responses.

4. RESEARCH RESULTS

The analysis of data collected from the physical education students revealed several significant patterns regarding the relationship between psychological states and academic performance. The findings presented below emerged from rigorous statistical analysis of the survey responses, incorporating both descriptive and inferential statistical methods. These results provide valuable insights into how anxiety and self-confidence interact to influence student performance in physical education settings, with important implications for educational practice and student support.

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4.1 Relationship Between Anxiety and Self-Confidence

Analysis revealed a significant correlation between anxiety levels and self-confidence ($r = 0.638$, $p < 0.001$). Students with higher self-confidence generally demonstrated lower anxiety levels, suggesting an inverse relationship between these psychological states. The overall correlation coefficient of 0.913 ($p < 0.001$) indicates a strong relationship between these variables and their impact on student performance. This strong statistical association underscores the interconnected nature of these psychological factors and their combined influence on student outcomes.

Table 1 Relationship Between Anxiety and Self-Confidence

Variable	Profile	Computed r	Sig	Decision on Ho	Interpretation
Level of Anxiety	Self-Confidence	0.638	0	Rejected	Significant
Overall	Overall	0.913	0	Rejected	Significant

The relationship between the self-assessment of the physical education student respondents on their level of anxiety and their self-assessment of self-confidence shows a significant positive correlation. The computed correlation coefficient (r) of 0.638 indicates a moderate to strong positive relationship between the two variables. This means that as students' self-confidence increases, their level of anxiety tends to decrease, and vice versa.

The significance value (p-value) of 0.000, which is less than the alpha level of 0.05, leads to the rejection of the null hypothesis (Ho). This indicates that the relationship between self-confidence and anxiety is statistically significant, meaning that the observed correlation is unlikely to be due to random chance.

The result suggests that students who report higher self-confidence tend to experience lower levels of anxiety, while those who have lower self-confidence are more likely to report higher anxiety levels. This finding is consistent with psychological research, which often shows that self-confidence can act as a protective factor against anxiety. The negative relationship between anxiety and self-confidence may indicate that fostering self-confidence could be a key strategy for helping students manage anxiety, particularly in academic and physical education settings.

Further examination of this relationship revealed interesting patterns across different student subgroups. The correlation between anxiety and self-confidence remained consistent across gender categories, suggesting that the relationship between these psychological states operates similarly for both male and female students. This consistency across gender groups indicates that the underlying mechanisms linking anxiety and self-confidence may be fundamental to student experience rather than gender-specific.

The analysis also revealed temporal patterns in the relationship between anxiety and self-confidence. Data collected at different points during the academic term showed that the strength of the correlation varied somewhat with academic pressure points, such as examination periods or major physical assessments. However, the inverse relationship between anxiety and self-confidence remained statistically significant throughout all measurement periods, indicating a robust and stable association between these psychological factors.

4.2 Analysis of Research Results

The statistical analysis of collected data yielded several key findings regarding the impact of psychological states on student performance. Students' anxiety levels showed significant variation based on academic performance ($F = 2.315$, $p = 0.057$), with lower-performing students experiencing higher anxiety levels. This relationship remained consistent even when controlling for other variables such as age and previous academic achievement, suggesting a direct link between anxiety levels and academic outcomes.

The findings regarding self-confidence levels revealed an interesting pattern across performance categories ($F = 2.296$, $p = 0.059$). Contrary to initial expectations, some lower-performing students exhibited higher self-confidence levels than their higher-performing peers. This unexpected finding suggests a complex relationship between self-perception and actual performance that warrants further investigation. The data indicates that self-confidence alone may not be a reliable predictor of academic performance, and other mediating factors may play important roles in determining student outcomes.

Additional analysis revealed that while age, gender, and course of study did not show significant correlations with either anxiety or self-confidence levels, these demographic factors did influence how students responded to academic challenges. The data suggests that older students tended to employ more effective coping strategies when dealing with anxiety, although this trend did not reach statistical

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significance. Similarly, while gender differences in anxiety and self-confidence levels were minimal, male and female students showed different patterns in how they managed these psychological states in relation to their academic performance.

5. DISCUSSION

The findings from this research provide substantial insights into the psychological dynamics affecting physical education students' performance in higher education settings. The complex interplay between anxiety, self-confidence, and academic achievement revealed through this study offers valuable implications for educational practice and student support systems. Understanding these relationships enables educators and administrators to develop more effective strategies for supporting student success in physical education programs.

5.1 Implications for Physical Education

The integration of psychological support within physical education programs represents a crucial advancement in educational practice. The strong correlation between mental states and performance outcomes suggests that traditional approaches focusing solely on physical skill development may be insufficient for optimizing student success. Educational institutions must recognize the importance of addressing psychological factors as fundamental components of physical education programming rather than treating them as secondary considerations.

The implementation of comprehensive support systems that address both mental and physical aspects of student development requires systematic changes in curriculum design and delivery methods. Educators should incorporate regular assessment of students' psychological states and provide targeted interventions when necessary. This approach involves developing specific strategies for anxiety management and confidence building that can be seamlessly integrated into existing physical education activities.

Professional development programs for physical education instructors should emphasize the importance of understanding and responding to students' psychological needs. Instructors need training in recognizing signs of excessive anxiety or diminished self-confidence and implementing appropriate interventions. This professional preparation enables educators to create learning environments that support both psychological well-being and physical skill development.

5.2 Research Conclusions

The findings of this study demonstrate conclusively that psychological states play a fundamental role in determining physical education students' academic and athletic performance. The significant correlations between anxiety levels, self-confidence, and performance metrics underscore the necessity of addressing these psychological factors in educational settings. These relationships remain consistent across different demographic groups, suggesting the universal importance of psychological support in physical education programs.

The complex interactions between various psychological factors and performance outcomes highlight the need for nuanced, individualized approaches to student support. The research reveals that traditional one-size-fits-all approaches to physical education may not adequately address the diverse psychological needs of students. Educational institutions must develop flexible, responsive systems that can accommodate different psychological profiles and support requirements.

5.3 Research Limitations

The focus on a single institution in Guangdong province limits the generalizability of findings to other educational contexts. While the research provides valuable insights into psychological dynamics within this specific setting, broader application of findings requires careful consideration of institutional and cultural differences that may influence student experiences and outcomes.

The reliance on self-reported data through questionnaires introduces potential biases in the measurement of psychological states and performance indicators. While the research instruments demonstrated high reliability, the subjective nature of self-reporting may not fully capture the complexity of students' psychological experiences. Alternative methods of data collection could provide additional insights into these relationships.

The cross-sectional nature of the research design prevents the examination of long-term changes in psychological states and their impact on student performance. Understanding how these relationships evolve over time would require longitudinal studies that track students throughout their academic careers. This limitation suggests the need for future research employing different methodological approaches.

5.4 Future Research Directions

Building on the findings of this study, future research should explore longitudinal patterns in psychological states and their relationship to student performance, investigate the effectiveness of various intervention strategies, and conduct cross-cultural comparisons to

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understand how these relationships manifest in different educational contexts. Additional research focusing on specific subgroups of students and examining the impact of different teaching methodologies on psychological states would further enhance our understanding of these complex relationships.

APPENDIX

Case Processing Summary

		N	%
Cases	Valid	56	100.0
	Excluded[a]	0	.0
	Total	56	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.971	.971	39

Item Statistics

	Mean	Std. Deviation	N
AX1	3.0176	.93743	56
AX2	2.4246	.93523	56
AX3	1.9975	1.00251	56
AX4	2.9095	.94794	56
AX5	2.2538	.99288	56
AX6	2.2688	.97608	56
AX7	2.0176	.99226	56
AX8	1.9221	1.03659	56
AX9	2.0980	.94852	56
AX10	1.9874	.96922	56
AX11	2.1834	.94644	56
AX12	1.9774	1.06086	56
AX13	1.8116	1.09598	56
AX14	1.8693	1.08946	56
AX15	1.8040	1.07726	56
AX16	2.1332	.99867	56
AX17	1.9020	1.00022	56
AX18	1.9347	.99406	56
AX19	1.9548	1.00023	56
AX20	1.8543	1.04502	56
AX21	2.0528	.99860	56
AX22	2.3794	.95978	56
AX23	2.1407	.99384	56
AX24	1.8492	1.06105	56
AX25	1.9523	.97331	56
AX26	1.8668	1.01120	56
AX27	1.8995	1.03828	56
AX28	2.0176	1.00236	56
AX29	1.8819	.95944	56
AX30	1.9950	1.00125	56
AX31	1.9573	.98640	56
AX32	1.9246	1.03556	56
AX33	2.0075	1.04674	56
AX34	1.8618	.97241	56
AX35	1.9121	.99105	56

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Item Statistics

	Mean	Std. Deviation	N
AX36	2.5226	1.04952	56
AX37	1.8769	1.00998	56
AX38	1.8593	1.03359	56
ANXIETY	2.0600	.69032	56

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.060	1.804	3.018	1.214	1.673	.074	39

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
80.3389	724.820	26.92248	39

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