

Exploring Physical Literacy and Motivational Orientations: Their Impact on Physical Activity among Chinese College Students

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Abstract

This study delves into the concept of physical literacy (PL) and its critical role in promoting holistic engagement in physical activities (PA), with a focus on Chinese college students. It highlights the integration of psychological aspects such as motivation and confidence with physical competencies and cognitive understanding to foster active participation in PA. Utilizing assessment tools like the College Student Physical Literacy Questionnaire (CSPLQ) and the Situational Motivational Scale (SIMS), this research provides insights into students' self-perceptions of PL and their motivational orientations. A systematic literature review, adhering to PRISMA guidelines and using tools like Connected Papers, offers a comprehensive examination of the correlation between PL components and resilience, the challenges of assessing and enhancing PL across various populations, and the role of PE in developing PL and motivational orientations. This synthesis underlines the importance of integrating PL into educational curricula and health promotion strategies to support the development of resilient, healthy, and active societies. The study calls for continued innovation, research, and policy efforts to understand and nurture PL for individual and community betterment.

Keywords: Physical Literacy; Motivational Orientations; Physical Activity; Chinese College Students; Health Promotion.

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1. Introduction

Physical literacy (PL) is increasingly recognized as a vital aspect of health and education, advocating for a holistic approach to engaging in physical activity (PA) that extends beyond mere physical competence. It integrates various dimensions including motivation, confidence, knowledge, and responsibility [1]. This comprehensive understanding of PL is particularly pertinent for Chinese college students, for whom college years represent a critical period for developing lifelong health and activity habits.

Research has developed specific tools to assess PL and motivational factors among this demographic, such as the College Student Physical Literacy Questionnaire (CSPLQ) and the Situational Motivational Scale (SIMS). Luo and his colleagues [2] developed the CSPLQ, which assesses students' self-perceptions across physical and behavioral, affective, and cognitive domains, including motor skills, perceptions of physical activity, motivation, and confidence. Their study confirms the validity of the CSPLQ, demonstrating a strong correlation between physical literacy and physical activity behaviors, thus providing a direction for promoting physical fitness among college students in China. Moreover, Ma and his colleagues [3] explored the relationship between perceived PL and PA levels among Chinese undergraduates, highlighting that higher levels of motivation and confidence are predictive of higher PA levels. This study emphasizes the significance of fostering a supportive environment that enhances students' motivation and engagement in PA, potentially leading to improved health outcomes. In addition, the simplified Chinese version of the Perceived Physical Literacy Instrument (PPLI) has been validated for Chinese undergraduates, offering insights into the core attributes of PL, such as motivation, confidence, physical competence, and interaction with the environment [3]. This instrument enables further exploration of factors influencing PA levels and the development of targeted intervention programs. These studies underscore the multifaceted nature of physical literacy, highlighting its importance in promoting lifelong engagement in physical activity and overall well-being among Chinese college students. By addressing the psychological and cognitive components of physical literacy, alongside physical competencies, educational and health initiatives can more effectively foster an environment that supports sustained participation in physical activity.

2. Research Methods

Conducting a systematic literature review is a meticulous process that demands a well-organized and methodical approach to gather, appraise, and synthesize the existing body of research on a given topic. The PRISMA guidelines offer a structured framework for reporting such reviews, ensuring the process is clear, transparent, and rigorous. Below is the detailed explanation of how to conduct a systematic literature review using PRISMA guidelines and tools like Connected Papers:

2.1. Define the Research Question

The initial step involves articulating the research question or hypothesis that the review intends to address. This foundational step is critical as it shapes the scope, search strategy, inclusion criteria, and the analytical framework of the review. A well-defined research question ensures the review remains focused and relevant. In

this study, the primary research question is:

1. What is the impact of physical education programs on the development of physical literacy among school-aged children and adolescents?

2.2. Develop a Protocol

A review protocol is a blueprint of the review process. It should detail the research question, objectives, criteria for including and excluding studies, sources of information, search strategies, methods for extracting and synthesizing data, and any analytical plans. Registering this protocol with a registry such as PROSPERO enhances transparency and helps avoid duplication of work.

2.3. Literature Search

This step involves conducting a thorough search to identify studies relevant to the research question. This requires choosing suitable databases (e.g., PubMed, Web of Science, Scopus) and employing a mix of keywords and Boolean operators that align with the research topic. It's crucial to document every aspect of the search strategy meticulously, including the databases used, the search terms, and the date range of the search. Connected Papers is a tool designed to visualize the connections between academic papers. After completing the initial search, Connected Papers can be used to generate a graph illustrating how papers are related, based on a key paper in the field. This helps in identifying clusters of related research, seminal papers, and ensuring a comprehensive understanding of the topic's literature.

2.4. Study Selection

Screen the identified records based on predefined inclusion and exclusion criteria. This typically involves a two-phase screening process: an initial review of titles and abstracts, followed by a full-text review of selected articles. It's important to keep a detailed record of the selection process, including the reasons for excluding studies, to construct a PRISMA flow diagram.

2.5. Data Extraction

Extract pertinent data from the included studies using a standardized form. This data may include the authors, publication year, study design, sample size, and key findings. Piloting the data extraction form can help in ensuring consistency and reliability among reviewers.

2.6. Quality Assessment

Evaluate the quality or risk of bias of the included studies. Tools such as the Cochrane Risk of Bias Tool can be used for this purpose, especially for randomized trials. This step is crucial for assessing the evidence's strength and its potential influence on the review's conclusions.

2.7. Data Synthesis and Analysis

Synthesize the data in line with the research question. The synthesis approach may vary based on the data type; quantitative studies may lend themselves to meta-analysis if the data are homogeneous, while qualitative studies might require thematic or narrative synthesis.

2.8. Reporting the Review

Adhere to the PRISMA checklist to ensure comprehensive reporting of the review. The checklist covers aspects such as the title, abstract, methodology, results, and discussion. The PRISMA flow diagram should depict the study selection process.

2.9. Interpretation and Conclusion

Interpret the findings within the context of the existing literature, taking into account the review's limitations and its implications for practice, policy, or further research.

By adhering to the PRISMA guidelines and leveraging tools like Connected Papers, researchers can undertake systematic literature reviews that are thorough, transparent, and replicable, significantly contributing to their field of study.

3. Literature Review

3.1. Physical Literacy

Understanding the dynamics of resilience requires a comprehensive exploration of how physical and psychosocial factors contribute to an individual's capacity to navigate through and adapt to life's various challenges. A trans-disciplinary approach highlights the significance of physical literacy—encompassing movement skills, confidence, competence, and environmental engagement—as foundational elements that correlate strongly with resilience, particularly during crucial developmental stages. This broad perspective underscores the multifaceted nature of resilience as a vital component in promoting health and enabling successful adaptation across different life contexts.

Research in resilience reveals a nuanced interplay of biological, personal, and social factors, particularly evident in contexts as challenging as cancer diagnosis and treatment. Studies, such as those conducted by Seiler and Jenewein [5], demonstrate that resilience is not a static trait but a dynamic process that can be fostered through targeted psychological and pharmacological interventions, encouraging posttraumatic growth and improving treatment outcomes.

Psychological factors and the undeniable support of social networks are paramount in shaping an individual's resilience. Systematic reviews, including the work of Stewart and Yuen [6], have illuminated how self-efficacy, self-esteem, and an optimistic outlook, among other factors, are integral to developing resilience. A supportive social environment further amplifies resilience, suggesting that interventions to bolster these psychological and social supports can significantly enhance an individual's ability to withstand adversity.

The genetic underpinnings of psychological resilience have also been scrutinized, revealing that resilience is influenced by a complex array of genetic variants, as highlighted by Niitsu and his colleagues [7]. This genetic perspective adds another layer to understanding resilience, suggesting that genetic predispositions, in concert with environmental factors, play a crucial role in determining an individual's resilience capacity.

Focusing on specific populations, such as older adults and health professionals, research has identified various resilience-related factors that impact mental health and the ability to tackle workplace challenges effectively. Whitson and his colleagues [8] emphasize the need for interventions that enhance resilience among these groups to support mental health and quality of life in the face of adversity.

These insights underline the profound connection between physical literacy and resilience, advocating for a unified effort among researchers, educators, healthcare providers, and policymakers to weave physical literacy into the fabric of educational curricula, health promotion strategies, and broader societal initiatives. Moving forward, it is imperative to delve deeper into the complexities of physical literacy, refine its assessment methodologies, and devise interventions tailored to maximize resilience's potential, thereby fostering a society that is not only healthier but also more resilient and active.

3.2. Relationship of Physical Literacy and Motivational Orientation

This synthesis analysis delves into a comprehensive body of research that explores the complex concept of physical literacy and its far-reaching implications across diverse demographic and contextual landscapes. Central to these investigations is the pivotal role of physical education in cultivating healthy physical habits, shaping motivational orientations, and preparing future educators to promote active lifestyles and healthy habits among the youth. A notable study by González-Valero and his colleagues [9] underscores the importance of a positive motivational climate and lifestyle choices, such as adherence to the Mediterranean diet, in influencing the physical activity engagement of prospective Physical Education teachers. This research emphasizes the holistic development of physical literacy within educational settings, highlighting the interplay between dietary habits, motivational climates, and physical activity.

The work of Nesdoly and his colleagues [10] illuminates the often-overlooked perspectives of Indigenous peoples within the physical literacy discourse, pointing to a notable inclusivity and cultural sensitivity gap in this area. This gap underscores the necessity for a broader exploration of physical literacy experiences to deepen our understanding and application of this concept across various cultural contexts. Further, Burgueño and his colleagues [11] explore the psychological dimensions of physical literacy by analyzing how different motivational profiles influence students' attitudes and behaviors in physical education environments. Their findings reveal a complex relationship between motivational orientations and sportsmanship, advocating for nuanced pedagogical strategies that accommodate diverse motivational needs. Emm-Collison and his colleagues [12] expand upon the motivational discourse by investigating the longitudinal stability of motivational profiles among parents, suggesting that cultivating more autonomous forms of motivation is crucial for encouraging sustained physical activity engagement. This perspective introduces a generational dimension to the physical literacy conversation, indicating that motivational orientations have implications that extend beyond the

individual to affect families and communities at large.

The study conducted by Sum and his colleagues [13] on the evolution of physical literacy within Hong Kong's education system exemplifies the growing acknowledgment and incorporation of physical literacy at various educational levels. This regional analysis reflects broader trends in the operationalization and scholarly examination of physical literacy within educational policies and practices. Cornish and his colleagues [14] then shift the focus to the application of physical literacy within health contexts, underlining its significance for healthcare providers and its potential to bridge physical literacy with health outcomes, especially among pediatric populations. This transition illuminates physical literacy's broad applicability beyond educational settings, extending into health promotion and disease prevention efforts.

Moreover, Klässbo and his colleagues [15] provide insights into the motivational foundations of physical activity within a clinical cohort, examining the therapeutic and rehabilitative potential of physical literacy principles among individuals suffering from osteoarthritis. This investigation attests to the versatility and practicality of physical literacy concepts in addressing specific health conditions and improving overall quality of life. Elsborg and his colleagues [16] highlight the obstacles encountered by inactive adults in achieving physical literacy, revealing that their physical literacy scores are generally lower than those of other groups. This finding underscores the imperative for targeted interventions and policies aimed at enhancing physical literacy across all age groups, particularly for those with initially low levels of physical activity engagement.

In conclusion, the collective insights from these studies enrich the dialogue surrounding physical literacy, illustrating its multifaceted nature, wide-ranging applications, and the critical importance of motivational orientations in fostering prolonged engagement in physical activities. These findings advocate for a holistic, inclusive, and culturally sensitive approach in research, education, and health promotion to fully leverage the benefits of physical literacy throughout the lifespan and across diverse populations.

3.3. Impact of Physical Literacy

Physical Education (PE) stands as a crucial element in fostering not just the physical health of individuals but also in developing their motivational orientations and professional outlooks, particularly for future PE teachers. This role extends to instilling active lifestyles and healthy habits among the youth, a responsibility highlighted by the work of González-Valero and his colleagues [17], who delve into the positive impacts of motivational climate and dietary choices on the engagement of aspiring PE teachers in physical activities. Their study emphasizes the holistic approach necessary for the development of physical literacy within educational frameworks.

Further research by Demetriou and his colleagues [18] scrutinizes the effects of school-based physical activity interventions on the motivational attitudes of school-aged children and adolescents towards physical activity. This examination of randomized controlled trials and quasi-experimental studies reveals the substantial influence that integrating physical activities into regular school lessons and break times has on students' engagement.

Recognizing the importance of PE programs, organizations like the United Nations have highlighted their role in fostering physical literacy and ensuring that students benefit from the well-documented advantages of adhering to physical activity guidelines. In line with this, Telford and his colleagues [19] evaluated the Physical Education Physical Literacy (PEPL) intervention, designed to improve students' fundamental movement skills, perceived physical abilities, and overall activity levels, showcasing the critical role of structured PE programs in educational settings.

Bopp and his colleagues [20] tackled the innovative yet challenging prospects of utilizing social media and wearable technologies to enhance physical literacy among the youth. Their discussion centers on how these modern tools can be integrated into PE settings to provide education on the biopsychosocial effects of physical activity, highlighting the ethical considerations and opportunities presented by these technologies.

In a longitudinal study by Hutmacher and his colleagues [21], the focus shifts to the need for support within PE, examining motivational regulation and other psychological factors that influence physical activity behavior among students. This study underlines the importance of autonomous motivation and its mediation by various psychological constructs, reinforcing the need for supportive educational environments that foster self-driven engagement in physical activities.

Elsborg and his colleagues [22] and Britton and his colleagues [23] further contribute to this discourse by exploring the prerequisites for physical activity among inactive adults and evaluating the construct validity of physical literacy in children, respectively. These studies provide insights into the challenges and opportunities in achieving physical literacy across different life stages and the importance of a comprehensive definition that includes confidence, motivation, physical competence, and knowledge.

Dong and his colleagues [24]'s investigation into the mediation effects of physical literacy on the psychological well-being of Chinese college students during the COVID-19 pandemic adds another layer to the understanding of physical literacy's broader implications. Their findings suggest that physical literacy plays a vital role in promoting healthy living and enhancing life satisfaction, especially in challenging times.

This body of research underscores the indispensable role of PE in developing a foundation for physical literacy that supports active lifestyles and healthy habits. The collective efforts of researchers like González-Valero and his colleagues, Demetriou and his colleagues, and Telford and his colleagues, highlight the need for an integrated approach that combines motivational climates, dietary habits, and comprehensive physical activity interventions to create environments conducive to the growth of physical literacy.

The exploration of novel approaches, including the use of social media and wearable technologies by Bopp and his colleagues, alongside the psychological insights provided by Hutmacher and his colleagues, and Elsborg and his colleagues, emphasizes the dynamic strategies necessary for enhancing physical literacy among diverse populations. The validation of physical literacy constructs by Britton and his colleagues, in tandem with Dong and his colleagues's examination of its psychological benefits, broadens our comprehension of its impact on health and well-being, advocating for continued innovation, research, and policy development to weave physical

literacy into the fabric of educational curricula and health promotion strategies globally.

4. Conclusion

In conclusion, this comprehensive study emphasizes the multifaceted nature of physical literacy (PL) and its profound impact on promoting holistic engagement in physical activity (PA), particularly among Chinese college students. By integrating psychological elements such as motivation and confidence with physical competencies and cognitive understanding, PL serves as a crucial framework for fostering active and consistent participation in PA. The pivotal stage of college years, marked by significant habit formation, underscores the importance of cultivating PL to lay the groundwork for a healthy, active lifestyle that can mitigate the risks associated with inactivity.

The utilization of tools like the College Student Physical Literacy Questionnaire (CSPLQ) and the Situational Motivational Scale (SIMS) has provided valuable insights into the students' self-perceptions of their PL and motivational orientations. Understanding these dynamics is essential for crafting targeted interventions aimed at enhancing PA engagement and, consequently, the overall well-being of this demographic.

The systematic literature review process, guided by the PRISMA guidelines and facilitated by tools such as Connected Papers, has allowed for a thorough, transparent examination of existing research. This approach has not only illuminated the significant correlations between PL components and resilience in early developmental stages but also highlighted the challenges in assessing and enhancing PL among different populations.

The exploration of PL's role in various contexts, from educational settings to health promotion and disease prevention, reveals its broad applicability and potential as a foundational concept for understanding and encouraging physical activity engagement. The studies reviewed contribute to a growing body of evidence that underscores the critical role of PE in developing PL and motivational orientations, essential for long-term health and well-being.

This synthesis of research underscores the need for ongoing innovation, research, and policy efforts to integrate PL into educational curricula and health promotion strategies effectively. As the understanding of PL's complexities deepens, so too will the ability to nurture resilient, healthy, and active societies, equipped to face the challenges of modern lifestyles. The collective findings of this study advocate for a concerted effort among researchers, educators, healthcare providers, and policymakers to champion the cause of physical literacy for the betterment of individuals and communities alike.

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