
RESEARCH ARTICLE

Supporting Career Development of Medical Staff through Psychological Capital: A Systematic Review

Yiqing He¹, Jingyu Liang² and Darong Liu³ ✉

¹School of Education, Guangzhou University, Guangzhou, China

²School of Humanities, Tongji University, Shanghai, China

³Department of Artificial Intelligence, Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur, Malaysia

Corresponding Author: Darong Liu, **E-mail:** darong.liu@foxmail.com

ABSTRACT

This study focuses on the psychological capital of medical staff, including medical students, and aims to explore the current status of psychological capital among medical staff and its impact on career development through a literature review. A literature search was conducted using keywords such as "medical staff" and "psychological capital," as well as "medical students" and "psychological capital" in databases including WOS, PubMed, Scopus, and CNKI. A total of 106 articles were retrieved, and after applying exclusion criteria, 22 English articles and 37 Chinese articles were included in the review. The findings of this study indicate that the majority of the research reviewed was empirical in nature. Psychological capital was measured using psychological capital scales, and its relationship with other variables, such as job satisfaction and perceived organizational support, was examined. The results consistently suggest that psychological capital plays a critical role in the career development of medical staff, particularly in areas such as academic performance, employment, and social support. Moreover, it was observed that the Positive Psychological Capital Questionnaire (PPQ-26) was widely used in Chinese literature, while the Psychological Capital Questionnaire (PCQ-24) was more commonly used in English literature. These scales provided researchers with a valuable tool for measuring psychological capital among medical staff and assessing its impact on various aspects of their career development.

KEYWORDS

Medical staff; psychological capital; career development; medical students

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1. Introduction

In recent years, particularly during the COVID-19 pandemic, medical staff have faced increasingly complex challenges and pressures in their career development process (Zhang et al., 2021). In the healthcare setting, they bear the responsibility of providing high-quality care to patients while also dealing with increased workloads, time pressures, interpersonal challenges, and professional burnout (Zhang et al., 2023; He et al., 2023; Chen et al., 2022; Bakker et al., 2017). These factors not only have negative impacts on the physical and mental health of medical staff but may also influence their job satisfaction and work performance (He et al., 2023; Bitmiş & Ergeneli, 2013).

Research has demonstrated that the psychological capital of medical staff can play a positive role in their career development (Yu et al., 2023; Zhao & Wang, 2022; Chen et al., 2022). Psychological capital refers to the inherent and cultivable psychological resources within individuals, including optimism, self-efficacy, hope, and resilience (Luthans et al., 2007b). These resources can

assist medical staff in better coping with challenges in their career, enhancing their psychological resilience, improving job adaptability, and enhancing their coping abilities.

However, the current research on the role of psychological capital in the career development of medical staff is relatively limited. This study aims to systematically review the existing research and analyze the impact of psychological capital on career development among medical staff. By integrating and synthesizing the findings from previous studies, we will summarize the concept of psychological capital and its measurement methods among medical staff. Furthermore, we will explore the mechanisms through which psychological capital influences career development in medical staff. Additionally, we will examine the moderating effects of different background characteristics of medical staff, such as age, work experience, and professional field, on the relationship between psychological capital and career development.

The purpose of this study is to provide medical staff, managers, and researchers with a comprehensive understanding of the current status of psychological capital among medical staff and its importance in career development. This will contribute to promoting job satisfaction and improving job performance among medical staff, as well as providing a scientific basis for developing appropriate career development strategies and psychological support programs. Finally, we will identify the limitations of existing research and propose future directions for further expanding our understanding of how psychological capital supports the career development of medical staff.

2. Methodology

2.1 Search Methods for Identification of Studies

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), a systematic review and meta-analysis procedure (D. Moher et al., 2010), was used to identify studies and narrow down the collection for this review of psychological capital among medical staff supports career development, as shown in Figure 1. This search was conducted on July 2nd, 2023, within both Web of Science, PubMed, Scopus and CNKI databases using the following group of keywords: ("Medical Staff*" AND "Psychological Capital") OR ("Medical Student*" AND "Psychological Capital"). Duplicates between the four databases and studies not within the inclusion criteria (outlined below) were excluded. Full texts of the remaining studies were then screened.

The following criteria were used to exclude unqualified studies:

- PsyCap only -- To enhance the rigor of the study, articles that predominantly focus on conceptual discussions or theoretical explanations of psychological capital will be excluded.
- Time -- Given the fast progress of research on this topic, only studies published within the past Ten years were included in this review.

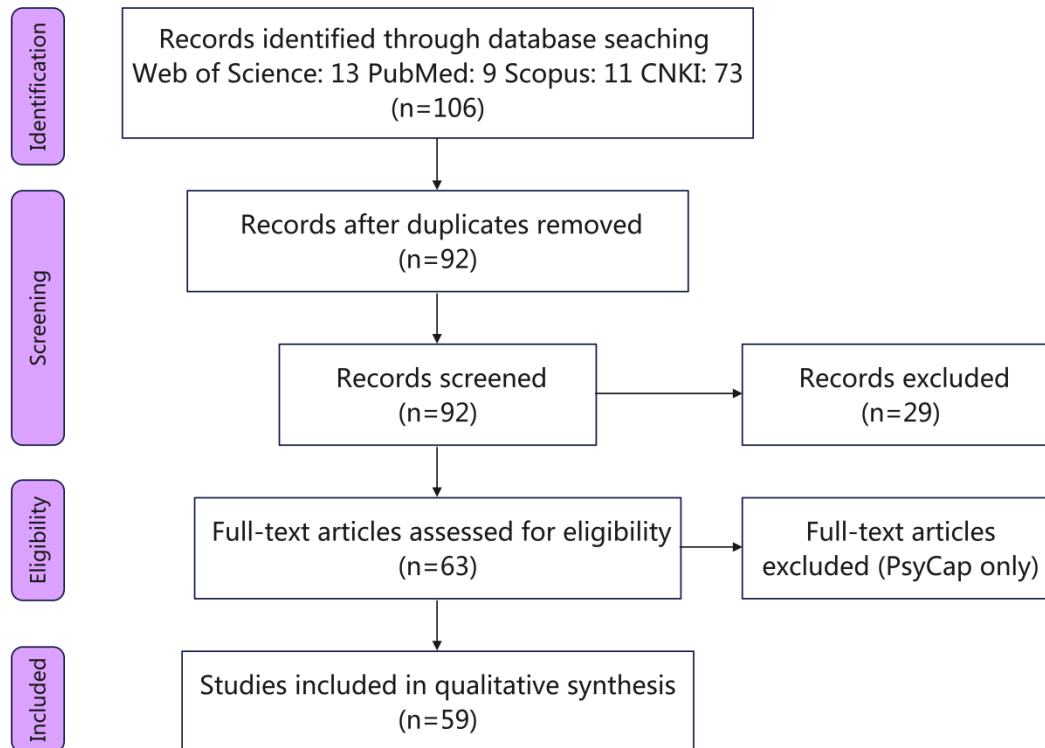


Figure 1: PRISMA study selection diagram. The diagram moves through the four stages of PRISMA study selection: Identification, Screening, Eligibility, and Included. This process led this review from an original count of 106 studies to a final count of 59 studies.

2.2 Data Extraction and Presentation

The following data categories were collected:

- a. Psychological Capital Scale Information
 - Types of Psychological Capital Scales
 - Statistical Measures of Psychological Capital Scales
- b. Career Information
 - Classification of Career Stages
 - Statistical Analysis of Career Stages

3. Results

This section provides a detailed overview of the psychological capital scales utilized in the past decade. Subsequently, an analysis is conducted to examine the usage patterns and distribution of these psychological capital scales across different years.

3.1 Which PsyCap Scale have been applied on Medical Staff Career in recent 10 years?

Several scales assessing psychological capital (PsyCap) have been utilized to evaluate the impact of PsyCap on the career development of medical staff, including medical students. These scales include the Psychological Capital Questionnaire (PCQ-24), Positive Psychological Capital Questionnaire (PPQ-26), Chinese Version of the Psychological Capital Scale (CVPCQ), and Psychological Capital Questionnaire for Adolescent Students (PCQAS).

The PCQ-24, developed by Luthans, Youssef, and colleagues (Luthans et al., 2007), assesses PsyCap dimensions such as hope, efficacy, resilience, and optimism consisting of 24 items. Its application in healthcare settings has explored the impact of psychological capital on variables such as job satisfaction, work engagement, and career commitment.

The PPQ-26, developed by Zhang Kuo and Zhang Sai (Zhang et al., 2010), is another commonly used scale that consists of 26 items through four dimensions of hope, self-efficacy, resilience, and optimism. Studies have employed this scale to examine the relationship between psychological capital and career development among medical staff. And the scale has good reliability and validity indicators.

Furthermore, the CVPCQ, originally developed by Luthans et al., was translated and revised in Chinese by Wen L and Shi-San QI (Wen et al., 2009).

Last but not least, the PCQAS, developed by Fang Biji (Fang., 2012), probed into the developing features of the adolescent students' psychological capital, the relation between adolescent life events and the psychological capital, the relation between the adolescent students' psychological capital and mental health.

These scales provide standardized measures for assessing psychological capital in medical staff and examining its effects on career development. The choice of a specific scale depends on the research objectives and context.

3.2 The Application Status of Psychological Capital Scales in Medical Staff over the Past Decade

With the advancement of society and medical technology, there has been an increasing demand for medical staff's professional competence and psychological qualities. Particularly, the outbreak of the COVID-19 pandemic in 2019 has had varying degrees of impact on countries worldwide, placing significant pressure and burden on medical staff in managing the crisis (Zhang et al., 2022). Consequently, research and application of psychological capital in medical staff have become increasingly important.

The psychological capital scales mentioned earlier were developed between 2009 and 2012. These scales assess the psychological capital of medical staff by measuring dimensions such as hope, self-efficacy, resilience, and optimism. Research utilizing these psychological capital scales has found a close relationship between medical staff's psychological capital and their career development. High levels of psychological capital have been positively associated with job satisfaction, job adaptability, occupational commitment, and resilience among medical staff (Shah et al., 2023; Secosan et al., 2021). Furthermore, psychological capital has shown positive associations with the psychological well-being and job performance of medical staff (Shi, 2018).

Furthermore, several studies have explored the influence of different background characteristics on the psychological capital of medical staff. For instance, factors such as age, work experience, and professional field have been found to have a positive moderating effect on the level of psychological capital among medical staff (Zhang et al., 2022). These research findings provide a basis for personalized psychological capital interventions to better meet the needs of different groups.

Over the past decade, there has been a gradual increase in the application of psychological capital scales in research focusing on medical staff. As depicted in Figure 2, the psychological capital scales, particularly the PCQ-24 and PPQ-26, have gained widespread usage in recent years. Furthermore, the development of psychological capital scales has been effective in expanding their application from adults to adolescents and university students. Future research should aim to further explore the mechanisms of psychological capital and effective intervention strategies to better support the career development and psychological well-being of medical staff.

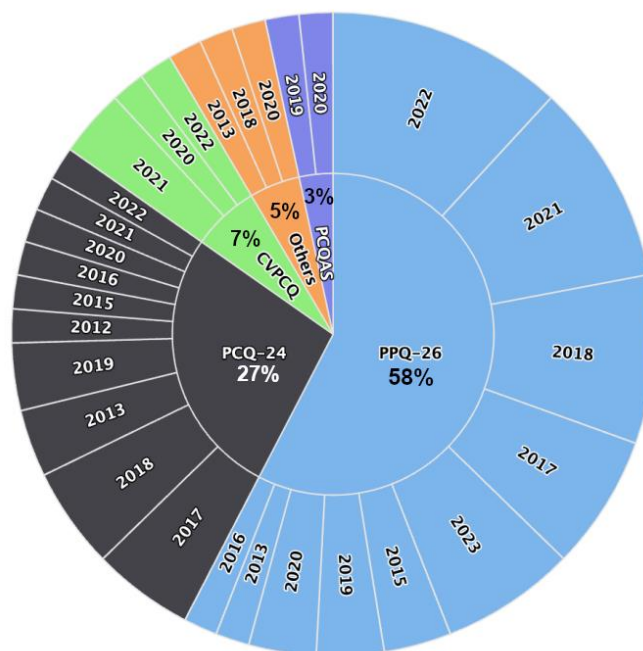


Figure 2 The Application Status of Psychological Capital Scales in Medical Staff over the Past Decade

3.3 What are the important career stages of Medical Staff?

The career of medical staff can be divided into several important stages that play a crucial role in their professional growth and development (Yang et al., 2019). The first stage is the academic phase, where individuals receive systematic education and training in medical school, nursing school, or other relevant professional programs. This stage provides them with foundational knowledge, skills, and theoretical understanding that form the basis for their future career. The next stage is the internship and training phase, where medical staff gain practical experience in hospitals, clinics, or other healthcare settings. They work under the guidance of experienced mentors, applying their academic knowledge and developing clinical skills and judgment.

After completing their education and training, medical staff enter the professional development stage. Here, they take on increasing responsibilities, participate in healthcare teams, engage in academic research, and pursue continuous education to enhance their professional competence. They start developing their professional interests and may choose to specialize further or seek higher-level positions. In the leadership and management stage, some medical staff transition into leadership and management roles (Megeirhi, H et al., 2018). They become department heads, hospital administrators, educational mentors, or research leaders. In this stage, they need to possess management and leadership skills, take on greater responsibilities, and influence and guide the career development of other medical staff (Widyanti et al., 2020).

Finally, medical staff reach retirement and the later stage of their careers. At this point, they gradually withdraw from primary clinical work and enter retirement. However, some professionals may choose to continue their involvement through volunteer work, educational mentoring, or consultancy, sharing their experiences and knowledge (AlKhars et al., 2021).

Understanding these career stages is crucial for medical staff to plan their career trajectory, pursue further professional development, and for healthcare institutions to provide guidance and support, ensuring that professionals receive appropriate training and development opportunities at each stage.

3.4 Career Stages of Medical Staff and Statistics

In the career of medical staff, psychological capital plays a significant role in various aspects such as employment capability, job satisfaction, work pressure (including burnout and coping styles) (Rad et al., 2017; Wei., 2018), and mental well-being (including depression and anxiety). As shown in Figure 3, medical staff' mental states have different emphases at different stages of their career. For instance, during the academic stage, factors such as learning efficacy, academic performance, and professional identity are strongly influenced by psychological capital. In the working stage, employment capability, learning ability, and occupational identity are greatly influenced by psychological capital.

Moreover, medical staff' job satisfaction and work stress are closely related to psychological capital. Higher levels of psychological capital are positively associated with greater job satisfaction and lower work stress. Medical staff face various work-related stressors, including high job demands, long working hours, a stressful work environment, and the emotional burden associated with patients' illnesses and suffering. Psychological capital plays a crucial role in helping them cope with these pressures.

Furthermore, the mental well-being of medical staff is also influenced by psychological capital. Depression and anxiety are common mental health issues, particularly prevalent in high-pressure medical environments. Research has found that the positive dimensions of psychological capital, such as optimism and resilience, are negatively associated with depression and anxiety. In other words, medical staff with higher levels of psychological capital tend to have lower levels of depression and anxiety (Yan et al., 2021).

Therefore, the psychological capital of medical staff plays a crucial role in various aspects of their academic performance, employment capability, job satisfaction, work stress, and mental well-being across different career stages. Understanding and cultivating the psychological capital of medical staff can assist them in better coping with challenges, enhancing job performance, alleviating stress, and promoting psychological well-being. This has positive implications for both individual career development and organizational performance and climate (Tian L et al., 2023). Hence, integrating psychological capital into career training and support programs for medical staff is highly important. This can be achieved by providing psychological support, offering training in stress management skills, encouraging positive thinking and behaviors, and other approaches to enhance the psychological capital levels of medical staff, thereby elevating their career development and psychological well-being.

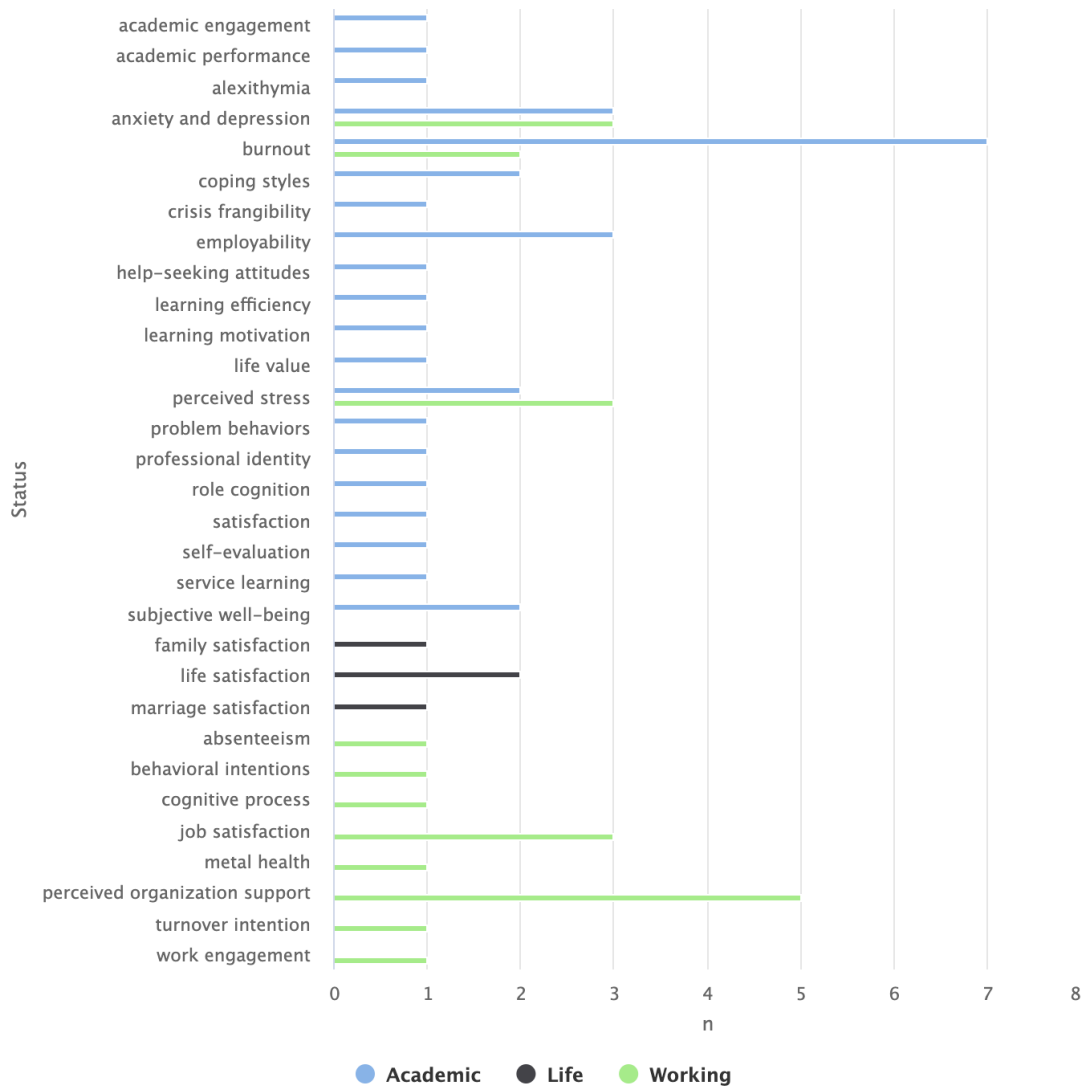


Figure 3 Career Stages of Medical Staff and Statistics

4. Discussion

The psychological capital of medical staff plays a significant role in supporting their career development. This section primarily discusses the importance of psychological capital in different career development stages of medical staff and highlights the significance of selecting appropriate psychological capital scales for measuring medical staff based on their career stage. Cultivating and supporting the psychological capital of medical staff can enhance their learning, job performance, and psychological well-being at different stages of their career. The discussion highlights several key points. Firstly, by fostering a sense of confidence, optimism, resilience, and hope, medical staff can enhance their career motivation and remain committed to personal growth and development. Secondly, the positive dimensions of psychological capital are positively related to job satisfaction. Medical staff who possess higher levels of psychological capital are more likely to be satisfied with their work. Thirdly, psychological capital aids in effectively coping with work-related stress. Given the demanding nature of healthcare work, medical staff with higher levels of psychological capital are better equipped to handle stress and employ proactive coping strategies. Finally, the cultivation of psychological capital promotes personal growth and development. By fostering optimism and hope, medical staff are encouraged to explore new learning opportunities and career paths, while resilience and self-confidence enable them to overcome challenges and setbacks, facilitating continuous personal and professional advancement.

Overall, recognizing the importance of psychological capital in the career development of medical staff, healthcare institutions and relevant stakeholders should provide training and support initiatives to help medical staff harness the full potential of their psychological capital, thus facilitating their personal and professional success.

5. Conclusion

In recent years, there has been a gradual increase in research on the psychological capital of medical staff, encompassing not only their professional career stages but also their academic stages (Wu., 2013). Particularly, the outbreak of the COVID-19 pandemic in recent years has sparked broader attention to the psychological capital of medical staff. Researchers have assessed the psychological capital of medical staff from various dimensions and explored numerous issues related to psychological capital. Furthermore, the development of psychological capital scales has become an integral part of research on medical staff psychological capital over the past decade.

Research on the psychological capital of medical staff not only focuses on its performance and impact in their professional career stages but also pays attention to their academic stages. The psychological capital of medical staff during their academic stage has significant implications for their career development and job satisfaction. Therefore, researchers have developed and applied relevant psychological capital scales to measure and assess the psychological capital of medical staff during their academic stage. This allows for an understanding of the relationship between aspects such as learning efficacy, academic performance, and academic burnout with psychological capital.

The outbreak of the COVID-19 pandemic has posed immense work-related pressures and psychological burdens on medical staff. Consequently, scholars have conducted in-depth research on the psychological capital of medical staff, exploring its impact and role in coping with the pandemic. These studies have assessed the psychological state and coping strategies of medical staff during the pandemic from dimensions such as optimism, resilience, and hope. They provide important insights for improving the psychological well-being and work performance of medical staff during this challenging period.

In the process of studying the psychological capital of medical staff, the development and application of psychological capital scales have also garnered significant attention. Over the past decade, numerous scales targeting the psychological capital of medical staff have emerged, aiming to comprehensively and objectively assess their levels of psychological capital. These scales cover various dimensions of psychological capital and provide researchers with reliable and effective measurement tools to gain in-depth insights into the psychological capital status of medical staff and its impact on their career development.

In the career of medical staff, the retirement and late career stages, although important, have received relatively less attention in psychological capital research. This stage holds significant implications for the psychological well-being and adaptability of medical staff as they undergo the transition from long-term professional work to retirement life (AlKhars et al., 2021).

6. Limitations and Future Research

This study primarily provides a systematic review of the relevant research on psychological capital in the career development of medical staff. It is observed that there is still a limited amount of research specifically focusing on the relationship between medical staff' career development and positive psychological capital. Additionally, there is a lack of dedicated psychological capital scales tailored to measure the psychological capital of medical staff. The current psychological capital scales are general in nature, not considering the unique aspects of medical staff' occupation. Future research could be directed towards developing specific psychological capital scales for medical staff and increasing attention to their positive psychological well-being. This would contribute to promoting the development of medical service quality.

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