

Postprint Study on the Current Status and Related Factors of Psychological Capital among Chinese Community General Practitioners

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Abstract

Background Psychological capital exerts significant influence on individual attitudes, behaviors, and performance. Currently, research on general practitioners' psychological capital and its related factors is limited.

Objective To understand the current status and related factors of psychological capital among community general practitioners in China, providing reference for primary healthcare human resource management.

Methods Using multistage stratified random sampling, from March to May 2021, 4,632 community general practitioners were randomly selected from eastern, central, and western China for a questionnaire survey. Statistical analysis was conducted using general descriptive analysis, rank-sum test, and generalized linear regression.

Results A total of 4,376 community general practitioners were included. The total psychological capital score was 104 (20), with an overall mean score of 4.33 (0.83). Region (central: $B=1.355$), age (40-50 years: $B=2.609$; ≥ 50 years: $B=4.035$), marital status (married: $B=1.801$), practice location (rural: $B=2.088$), administrative position (none: $B=-1.734$), weekly working hours (>50 hours: $B=2.743$), daily patient volume (20-40 patients: $B=2.177$), workload (moderate: $B=6.900$; heavy: $B=8.146$), work stress (moderate: $B=-6.936$; heavy: $B=-10.309$), career development opportunities (moderate: $B=2.073$; abundant: $B=7.747$), and workplace violence (low frequency: $B=-3.132$; moderate frequency: $B=-3.990$; high frequency: $B=-7.033$) were related factors of general practitioners' psychological capital ($P<0.05$).

Conclusion The psychological capital of community general practitioners in China is at an above-average level, with complex related factors. Attention should be paid to the mental health status of general practitioners, and psychological capital levels can be enhanced by targeting these related factors.

Full Text

Preamble

Psychological Capital and Associated Factors among Community General Practitioners in China

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Abstract

Background: Psychological capital (PsyCap) significantly impacts individual attitudes, behaviors, and performance. Currently, studies on PsyCap and its predictors among general practitioners (GPs) remain limited. **Objective:** To investigate the status of PsyCap and its associated factors among community GPs in China, providing evidence for primary care human resource management. **Methods:** Using multi-stage stratified random sampling, we conducted a questionnaire survey among 4,632 community GPs across eastern, central, and western China from March to May 2021. Statistical analyses included descriptive statistics, rank-sum tests, and generalized linear regression. **Results:** A total of 4,376 community GPs were included. The total PsyCap score was 104 (20), with a mean score of 4.33 (0.83). Significant associated factors included region (central: $B=1.355$), age (40–50 years: $B=2.609$; ≥ 50 years: $B=4.035$), marital status (married: $B=1.801$), practice setting (rural: $B=2.088$), administrative position (none: $B=-1.734$), weekly working hours (>50 hours: $B=2.743$), daily consultation volume (20–40 patients: $B=2.177$), workload (moderate: $B=6.900$; high: $B=8.146$), occupational stress (moderate: $B=-6.936$; high: $B=-10.309$), career development opportunities (moderate: $B=2.073$; abundant: $B=7.747$), and workplace violence frequency (low: $B=-3.132$; moderate: $B=-3.990$; high: $B=-7.033$) ($P<0.05$). **Conclusion:** The PsyCap of Chinese community GPs is above moderate level, influenced by complex factors. Attention should be paid to GPs' mental health, with targeted interventions to enhance PsyCap based on these associated factors.

Keywords: General practitioner; Psychological capital; Associated factor

1.1 Study Subjects

From March to May 2021, we employed multi-stage stratified random sampling to select participants. China was divided into eastern, central, and western regions. In each region, five provinces/municipalities/autonomous

regions were randomly selected (eastern: Shanghai, Liaoning, Zhejiang, Guangdong, and Fujian; central: Hubei, Hunan, Shanxi, Anhui, and Henan; western: Chongqing, Sichuan, Shaanxi, Yunnan, and Guangxi). Within each province/municipality/autonomous region, 40 community health institutions were randomly selected. From each institution, 40% of GPs with ≥ 1 year of general practice experience and present on the survey day were randomly selected to complete an anonymous electronic questionnaire distributed via WeChat.

This study focused on GPs' occupational mental health, comprising eight sections: basic information, perceived overqualification, professional identity, workplace violence, depression, career orientation, psychological capital, and retention intention. Based on the study theme and objectives, we analyzed sections 1, 4, and 7. Sample size was estimated using the cross-sectional study formula $n = [z^2 p(1-p)]/d^2$, where n represents sample size, p represents prevalence, z represents normal deviation (1.96), d represents allowable error (0.015), and $\alpha=0.05$. While no prevalence data existed for GPs' perceived overqualification, career orientation, psychological capital, or retention intention, previous research indicated that 97% of Chinese GPs reported high professional identity, the global pooled prevalence of workplace violence against GPs was 63.1%, and depression prevalence among Chinese GPs ranged from 34.24% to 72.73% (using 50% for calculation). Therefore, the minimum required sample size was 4,268 [$1.96^2 \times 0.5 \times (1 - 0.5) / 0.015^2$]. Considering non-response and potential invalid surveys, 4,632 questionnaires were distributed. This study was approved by the Medical Ethics Committee of Tongji Medical College, Huazhong University of Science and Technology [Approval No. 伦审字 (S099)], and all participants were informed of the study purpose and participated voluntarily.

1.2 Research Methods

Based on literature review, group discussion, and expert consultation, we designed the questionnaire according to actual conditions. The analyzed sections included: (1) Basic information: region, age, gender, ethnicity, marital status, education level, and work experience; (2) Workplace Violence Scale: Developed by Wang Peixi et al., this scale assesses the frequency of workplace violence experienced in the past year (types and occurrences). It contains five items measuring physical assault, emotional abuse, threats and intimidation, verbal sexual harassment, and physical sexual harassment. Each item is scored from 0 to 3 points for "0 times," "1 time," "2-3 times," and ">3 times," respectively, with total scores ranging from 0 to 15. Higher scores indicate higher frequency, categorized as zero (0 points), low (1-5 points), moderate (6-10 points), or high (11-15 points). In this study, the scale demonstrated acceptable reliability and validity (Cronbach's $\alpha=0.808$, KMO=0.773, Bartlett's test $\chi^2=9,821.952$, $P<0.001$); (3) Psychological Capital Scale: Originally developed by LUTHANS et al. and translated by LI Chaoping, this 24-item scale comprises four dimensions (self-efficacy, hope, resilience, and optimism) with six items each. Items

are scored from 1 to 6 points (“strongly disagree” to “strongly agree”), with a theoretical midpoint of 3.5 representing moderate level. Items 13, 20, and 23 are reverse-scored. Total scores range from 24 to 144, with higher scores indicating higher PsyCap. In this study, the scale showed high reliability and validity (Cronbach’ s α =0.947, KMO=0.974, Bartlett’ s test χ^2 =98,475.817, $P<0.001$).

The questionnaire was uploaded to Wenjuanxing to generate a survey link. The China Community Health Association distributed the questionnaire via WeChat to community health associations in sampled provinces/municipalities/autonomous regions, which then forwarded it to managers of community health institutions. Finally, institutional managers organized their GPs to complete the survey. Before the survey, detailed instructions were provided to managers regarding study purpose and procedures. To enhance participation, a financial incentive of 2 RMB cash red packet was offered to all completers via Wenjuanxing.

1.3 Statistical Analysis

Data were analyzed using SPSS 27.0. As the PsyCap total score was non-normally distributed (Shapiro-Wilk test $W=0.980$, $P<0.001$), we employed median (M), interquartile range (IQR), frequency, and percentage for descriptive analysis. Rank-sum tests were used for univariate analysis, and generalized linear regression for multivariate analysis. Statistical significance was set at $P<0.05$.

2.1 Basic Characteristics of Study Subjects

Of 4,632 distributed questionnaires, 4,376 valid responses were returned (94.47% response rate). Among 4,376 community GPs, 2,016 (46.07%) were from eastern regions, 1,184 (27.06%) from central regions, and 1,176 (26.87%) from western regions. The majority were aged 40–50 years (38.48%), female (59.37%), of Han ethnicity, and married. Most held bachelor’ s degrees (67.96%) and had <10 years of experience (45.34%). The one-year prevalence of workplace violence was 14.26%. Additional details are presented in Table 1 . The total PsyCap score was 104 (20), with a mean score of 4.33 (0.83). Dimension scores were: self-efficacy 27 (6), hope 26 (6), resilience 26 (6), and optimism 24 (4).

2.2 Univariate Analysis of GP Psychological Capital

Significant differences in PsyCap scores were observed across region, age, gender, marital status, education level, work experience, practice setting, employment mode, professional title, administrative position, annual income, weekly working hours, daily consultation volume, average consultation time per patient, proportion of time spent on administrative duties weekly, overtime frequency, home visit frequency, occupational stress, career development opportunities, and workplace violence frequency ($P<0.05$). No significant differences were found for ethnicity or workload ($P>0.05$). See Table 1 for details.

2.3 Multivariate Analysis of GP Psychological Capital

Generalized linear regression analysis was performed with all variables from Table 1 as independent variables and PsyCap score as the dependent variable. Results showed that central region ($B=1.355$), age 40–50 years ($B=2.609$) and \$50 years ($B=4.035$), married status ($B=1.801$), rural practice setting ($B=2.088$), weekly working hours >50 ($B=2.743$), daily consultation volume 20–40 patients ($B=2.177$), moderate ($B=6.900$) or high workload ($B=8.146$), and moderate ($B=2.073$) or abundant career development opportunities ($B=7.747$) were associated with higher PsyCap levels ($P<0.05$). In contrast, no administrative position ($B=-1.734$), moderate ($B=-6.936$) or high occupational stress ($B=-10.309$), and workplace violence (low frequency: $B=-3.132$; moderate frequency: $B=-3.990$; high frequency: $B=-7.033$) were associated with lower PsyCap levels ($P<0.05$). See Table 2 for details. The model demonstrated good fit (Deviance and Pearson Chi-Square goodness-of-fit tests both $P>0.05$). Variables without statistical significance are not shown.

3.1 Chinese Community GPs' Psychological Capital is Above Moderate Level

The total PsyCap score of 104 (20) and mean score of 4.33 (0.83) exceeded the theoretical midpoint of 3.5. Compared with previous GP studies reporting mean scores between 3.84 ± 0.61 and 4.44 ± 0.75 , these results indicate above-moderate PsyCap among Chinese community GPs. Variations across studies may reflect differences in location, sample size, and practice backgrounds. Among the four dimensions, self-efficacy scored highest, suggesting GPs feel confident in facing challenging work and striving for success. Optimism scored lowest, indicating a need to guide GPs toward more positive attributional styles to maintain an upward mindset and positive perspective.

3.2 Personal Characteristics Including Region, Age, and Marital Status are Associated with GP Psychological Capital

Multivariate analysis revealed that region, age, and marital status were significant factors. Central region GPs showed higher PsyCap than their eastern counterparts. Eastern China has more concentrated healthcare resources, faster development pace, and higher expectations from government and residents, which may reduce GP PsyCap. GPs aged 40 years demonstrated higher PsyCap, likely because increased age brings refined skills, richer experience, and more positive approaches to workplace challenges. Married GPs showed relatively higher PsyCap, possibly due to stronger communication abilities, better adaptation to workplace relationships and management systems, and emotional support from family members that stabilizes mood and enhances psychological resilience.

3.3 Multiple Work Characteristics Significantly Influence GP Psychological Capital

GP PsyCap was affected by various work characteristics including practice setting, administrative position, weekly working hours, daily consultation volume, workload, occupational stress, and career development opportunities. Rural GPs showed higher PsyCap than urban GPs, possibly because GPs with higher PsyCap are more willing to work in rural areas. GPs without administrative positions had lower PsyCap than those with such roles, likely because administrative positions are associated with better salary, benefits, and peer recognition and respect. GPs working >50 hours weekly, with daily consultation volumes of 20–40 patients, and with higher workloads showed higher PsyCap, consistent with Tong et al. but contrasting with LIU et al. Moderate overload may serve as a means to gain social capital and evaluation, positively influencing PsyCap. As in previous research, higher occupational stress was associated with lower PsyCap. Occupational stress reflects the imbalance between job demands and individual capabilities, resources, or needs, affecting physical and mental health through nervous and endocrine systems, causing fatigue, sub-health symptoms, and reduced work capacity, ultimately increasing psychological burden and burnout while decreasing PsyCap. GPs with more career development opportunities showed higher PsyCap, as such opportunities promote personal and professional growth, enhance work motivation, enable self-actualization, and elevate PsyCap even in primary care settings.

3.4 Workplace Violence Frequency Negatively Correlates with GP Psychological Capital

After controlling for demographic and work-related variables, workplace violence frequency demonstrated significant negative predictive effects on GP PsyCap. Higher violence frequency was associated with lower PsyCap, consistent with multiple previous studies. Based on stress theory, workplace violence threatens GPs' survival, safety, and self-realization of respect and personal value, generating negative emotions that damage mental health. Workplace violence is a major global public health issue that seriously endangers occupational safety, causing physical harm, reducing work motivation, and triggering psychological problems such as fear and depression, ultimately affecting healthcare quality. Therefore, violence prevention and control are crucial. Governments should improve relevant policies and regulations, while primary care institutions should establish prevention and monitoring mechanisms to create safe working environments and protect GPs' personal safety.

This large-scale national survey found that Chinese community GPs' PsyCap is above moderate level but influenced by multiple factors. Policymakers and managers should prioritize GPs' mental health, implementing tailored, multifaceted interventions that address workload, reduce occupational stress, broaden career development prospects, and prevent workplace violence.

This study has several limitations. First, as a cross-sectional survey, causality cannot be established. Second, all data were self-reported, potentially introducing misclassification and recall bias. Finally, only partial associated factors were analyzed; other unexamined factors may exist. Future research will conduct more comprehensive longitudinal or interventional studies to enrich the evidence base.

Author Contributions: ZHANG Li conceptualized and designed the study and drafted the manuscript; ZHENG Yanling collected and organized literature and verified data; FENG Jing designed the questionnaire, performed data analysis, and revised the manuscript; GAN Yong conducted feasibility analysis, revised and proofread the English manuscript, and provided overall supervision.

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

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