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ORIGINAL RESEARCH

The Influence of Social Capital: A Trigger for Increasing Job Satisfaction

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Purpose: Evidence suggests that social capital in medical and health institutions is associated with the job satisfaction of medical staff. We examined the relationship between the social capital of Primary Healthcare Institutions (PHI) and the job satisfaction of pharmacists within it.

Materials and Methods: From August 24 to September 1, 2021, we visited a total of 253 PHIs in 31 provinces of China. The social capital of healthcare organizations reported by employees (SOCAPO-E) scale was used to measure the social capital level of PHIs. And the Minnesota short-form job satisfaction scale was used to obtain pharmacists' job satisfaction. We employed multiple linear regression to explore the relationship between the social capital of PHI and pharmacists' job satisfaction. We also examined the effects of pharmacists' individual characteristics and job-related factors on pharmacists' job satisfaction.

Results: It was statistically significant that the higher the social capital stock of PHI, the higher the job satisfaction level of pharmacists becomes. In addition, the regression analysis revealed that work hours, employment form, license acquired condition, disputes with patients and training frequency were significantly associated with the job satisfaction of pharmacists in PHI.

Conclusion: Social capital in PHI has a significant impact on pharmacists' job satisfaction, suggesting that investing in social capital in PHI is a valuable investment in China. Furthermore, trust, which can be divided into affective trust and cognitive trust, and reciprocity are vital to the fulfillment of pharmacists' job satisfaction as core elements of social capital.

Keywords: social capital, primary healthcare institution, pharmacist, job satisfaction

Background

In China, pharmacists mainly undertake pharmacy services such as prescription review, drug monitoring and rational drug use, [1] playing a critical role in primary healthcare institutions (PHI).[2] At present, pharmacists' work in PHI is still "drug-centered". They just carry out tasks such as drug supply, distribution, management, and preparation, making it difficult to reach the goal of rational drug use. Consequently, pharmacists may burn out as their significant role in drug-related activities is not realized or even overlooked.[3] Phenomenon like low motivation, poor service attitude, and low service quality may also arise.[4]

In this background, job satisfaction may be one of the breakthroughs in fulfilling the pharmacists' function. Job satisfaction is a key indicator that reflects the subjective perception of primary pharmacists' work in China at both psychological and physical levels, which is closely related to job performance.[5,6] Higher levels of job satisfaction among health care providers often bring better service quality and lower job burnout.[7–15] High job satisfaction will increase primary care pharmacists' motivation to work, ultimately enhancing their service quality. Studies have shown that job satisfaction among healthcare service providers in China is at general or low level.[16,17] Pharmacists in PHI, especially, have low level of job satisfaction,[18] in other words, still have much room for improvement. The low job satisfaction level of primary pharmacists will weaken their motivation, reduce productivity and detriment service, influencing many stakeholders. Patients' demand for high-level medical services will not be met. The relationship between pharmacists

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and patients will be harmed. And the transformation of the "patient-centered" function of pharmacists and the construction of primary pharmacy service system will be hindered.

Existing researches show that social capital in healthcare institutions is positively related to job satisfaction among medical staff.[19–21] And organizational social capital is a significant predictor of overall job satisfaction for physicians in addition to professional experience and workload.[22] Another study showed a direct, positive and significant relationship between trust, a core element of social capital, and job satisfaction of hospital staff.[23] And in dental clinics, a study, developing a multilevel discrete time proportional risk model, found that workplace social capital improved the quality of dental fillings through increased job satisfaction.[19] The above studies suggest that social capital may decrease the stress, build trust, and unify values, contributing to the job satisfaction.

The research on social capital in the medical and health field focuses on health care, new rural cooperative medical care, utilization of health resources, medical services, doctor-patient relationship, social capital and health, etc.[24–28] However, the research on social capital in PHI is at a blank stage. There is still no evidence to prove that social capital in PHI in China can improve the job satisfaction of pharmacists. In the context of the hierarchical diagnosis and treatment policy in China, the PHI in the healthcare system is becoming more prominent in China public health area. To fill the research gap, this study aims to empirically examine the impact of social capital in PHI on pharmacists' job satisfaction in the Chinese context. This study also tries to explore how social capital in PHI enhance pharmacists' job satisfaction and empower the capacity building of PHI in China, which may expand the field of social capital research at the theoretical level, and reveal the current situation of social capital stock of PHI in China and the primary pharmacists' job satisfaction at the practical level. And the research goal is to improve the job satisfaction of pharmacists and ultimately strengthen the construction of primary pharmacy service capacity in China.

Literature Review and Hypothesis Development

Social Capital

The concept of social capital is first proposed in sociological research.[29] It refers to the interactions among people like the mutual assistance, cooperation, voluntary participation with trust as the core and common perceptions like beliefs, values, and behavioral norms formed on the interactions.[30] At present, there is not a unanimous concept of social capital, which can be mainly divided into two types according to relevant studies. The mainstream viewpoint on social capital comes from Bourdieu, who defines social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" and emphasizes the existence of social capital as an individual resource. The other perspective is influenced by Coleman and Putnam. Putnam defines social capital as "features of social organizations such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit",[13] emphasizing social capital as a resource of an organization or institution. Social capital at the organizational level is either closely related to or different from the social capital that exists as an individual resource. To some extent, social capital at the organizational level is formed by the flow of individual social capital through the interpersonal interaction network, which can promote coordination and collective action and improve organizational performance.[20,31] At the organizational level, social capital in healthcare organizations refers to the network of relationships built up through interactions between employees of the organization, which can facilitate cooperation for the common good, including trust, reciprocity and recognition between employees.[32] Based on the above definition, this research defines social capital in PHI as the collective values, beliefs and the mutual trust of the staff within the institution.[33]

Job Satisfaction

Pharmacist job satisfaction refers to the state of mind in which pharmacists have positive feelings about their work and the factors closely related to the work in a particular organization or healthcare institution.[34] There are many factors that affect the job satisfaction of pharmacists in PHI in China, including training opportunities, interpersonal relationships, public recognition, workload, management system, career development, working conditions, remuneration and welfare.[18,35] Through literature search, there is no research on the correlation between job satisfaction of primary pharmacists and social capital in primary care institutions in China.

Development of Hypothesis

Existing theories and evidence from various countries show that social capital in medical and health institutions can improve the job satisfaction of medical staff.[19–21,23,36–40] The atmosphere of trust, shared values, and belief in mutual assistance and reciprocity successfully established within PHI can strengthen cooperation and collaboration, reduce insecurity, job uncertainty, enhance employees' sense of belonging, and improve job performance. In summary, social capital arises from informal standards internalized within an organization and promotes cooperation.[41–46] In the "patient-centered" pharmacy service, pharmacists in PHI will collaborate with physicians, nurses and other parties to improve the quality of life of patients. Currently in China, the level of cooperation between pharmacists and physicians is low. Social capital can promote the collaboration between primary care pharmacists and physicians with mutual trust, shared values and beliefs of reciprocity. Unlike facilitating collaboration by hardware conditions such as the mode of collaboration and the equipment required for collaboration, social capital emphasizes the role of the subjective feelings of individuals in the interpersonal network which motivates the workers to act and may improve the job satisfaction of pharmacists in PHI. Based on the above evidence, we hypothesized that:

H. There is a positive relationship between social capital and pharmacists' job satisfaction in PHI.

Materials and Methods

Study Design and Research Objects

PHI in China includes community health service centers (stations), township (street) health centers, village clinics, outpatient departments, and clinics (infirmaries).[47] In this study, the social capital questionnaire was distributed to primary health care workers including physicians, pharmacists and nursing staff for the measurement of social capital in PHI. The questionnaire of pharmacists' job satisfaction was distributed only on pharmacists. The inclusion criteria are: (1) working in PHI for at least 1 year; (2) having the ability and willingness to participate and complete a 30-minute questionnaire; (3) signed the informed consent form.

The contact information of PHI was obtained through open information, to which we called and explained the purpose of the research and asked them whether to allow their personnel to participate in the research. For those who allowed their personnel to participate in the research and provided contact information, we contact them directly to ensure their willingness and inclusion information. Finally, a list of respondents was formed. And 804 physician questionnaires, 641 pharmacist questionnaires and 940 nursing staff questionnaires was distributed across 31 cities with more than 25 participants. And there are 253 PHI in these cities.

Covariates

Personal characteristics and work factors of pharmacists in PHI were selected as covariates. The personal characteristics of pharmacists in PHI include: gender, age, annual income, marital status, and educational background. Factors related to working conditions and career development are important variables that affect the job satisfaction of pharmacists.[18] Therefore, this study focuses on selecting covariates that can reflect work conditions and career development. Work factors can be divided into working conditions factors (employment form, working hours per week, whether have experienced at least one doctor-patient dispute in the past year, whether need to work night shifts) and career development factors (working years, whether obtained a licensed pharmacist certificate, whether qualified to practice as a pharmacist by title, whether qualified as a practicing pharmacist, whether obtained a clinical pharmacist (job training) certificate, occupational subcategory, job title, technical title, access to the field of pharmacy, number of training in the last 3 years).

Measurement

For Social Capital of PHI

There are currently many versions of the social capital measurement questionnaire, including the social capital integrated questionnaire (SC-IQ) developed by the World Bank for low- and middle-income countries,[48] the short Social Capital Assessment Tool[49] adapted from SC-IQ's social capital measurement tool for nurses' work environment,[50] and another

tool developed by the Finnish public sector for hospitals.[46] However, a reliable measurement tool for social capital in healthcare organizations is still missing. The above tools may be applied to a certain type of medical personnel (such as nurses),[50] which are not in line with the purpose of this study. And the 8-item scale developed in Finland focuses more on leadership support rather than communal social capital despite measuring different components of workplace social capital.[46] Considering that this study investigates the social capital of PHI as a whole, it is necessary to integrate data from different types of medical personnel. Therefore, we choose the measurement tool called social capital of healthcare organizations reported by employees (SOCAPO-E) instrument,[51] which measures the social capital of healthcare organizations by surveying the social capital of healthcare organizations reported by staff and has good reliability and validity. The scale consists of six items, covering the six dimensions of communal social capital proposed by Bauman: mutual understanding, warm circle, trust, "we-feeling" (ie a sense of being one of a team), mutual help and shared values.[52] Answer options include: "I strongly disagree" (1), "I somewhat disagree" (2), "I somewhat agree" (3), "I strongly agree" (4).

For Job Satisfaction of Pharmacists in PHI

Tools for measuring job satisfaction are usually determined according to research objects.[34,52–54] This study refers to the authoritative and widely used scales that can effectively measure the job satisfaction of medical and health personnel. The Minnesota Satisfaction Questionnaire (MSQ) was developed according to the theory of job adaptation.[55] It included 20 subscales, measuring job satisfaction in a comprehensive way. However, it was not widely used due to the large number of items. Therefore, a simplified version of MSQ was proposed by Spector (1997), which was widely used in job satisfaction-related research. The Minnesota Short Form Job Satisfaction Scale measures overall job satisfaction based on internal job satisfaction and external job satisfaction. Internal job satisfaction emphasizes the sense of achievement and meaning brought by work tasks and external job satisfaction emphasizes the emotional satisfaction brought by good working environment. In this study, the Minnesota Short-Form Job Satisfaction Scale was selected to measure the job satisfaction of pharmacists in PHI. The scale was scored on a Likert 5 scale. The average score of 20 items represented the job satisfaction condition of pharmacists. The higher the score, the higher the level of satisfaction is.

Data Collection

From August 24 to September 1, 2021, 15 data collectors were dispatched to different cities and were responsible for neighboring cities with evenly distributed tasks. The data collectors were not allowed to show subjective feelings towards the questionnaire and should only give instructions on questionnaire filling. If the respondents of an institution could not participate in the survey, the data collector could survey other respondents who met the standards according to the principle of convenience sampling or the method of snowball recommendation to ensure a sufficient sample size. All questionnaires from 253 PHI were uploaded and examined. After data cleaning, 365 pharmacists' questionnaires of 641 pharmacists' questionnaires, 382 physicians' questionnaires of 804 physicians' questionnaires and 400 nurses' questionnaires of 940 nurses' questionnaires were reserved (valid response rate were 57%, 48%, 43% respectively). Several exclusion criteria were applied: (1) the institution where the respondent belongs to is not a PHI; (2) the answers of questions were illogical; (3) the collected questionnaire information was incomplete was damaged and unable to be fixed by return visits.

Data Analysis

Descriptive analysis was conducted to report the characteristics of the sample. Multiple linear regression was used by Stata 15.0 to assess the association between each variable with the score of pharmacists' job satisfaction. A p value of less than 0.05 was considered statistically significant. And multicollinearity was assessed by examining the variance inflation factor (VIF). If the mean VIF value of all variables is bigger than 2, there are multicollinearity in the regression model. And independent variables with a VIF value bigger than 10 should be removed. Then VIF was examined again. This was repeated until multicollinearity was suspected. Besides, we developed two other models to evaluate the robustness of the results. For one, only social capital of primary medical institute and characteristics of pharmacist

were included in the regression. For another, personal professional qualifications and other related factors were included in the sequence. The similarity of the results of both models could support the relative robustness of the final model.

Results

Tests on Scales' Reliability and Validity

All questionnaires were written in Chinese and verified by researchers, and then a total of 3 rounds of pilot surveys were conducted in PHI in Nanjing, Jiangsu province to test the rationality, comprehensibility, and readability of the questionnaires. In May 2021, a questionnaire pre-test on 60 pharmacists from 30 PHI in 5 cities was conducted in Jiangsu province, using the principle of convenience sampling. The reliability of SC-IQ and MSQ was tested using Cronbach's coefficient, which was both acceptable after inspection (the Cronbach's coefficient of SC-IQ and MSQ were 0.943 and 0.942, respectively). The validity of the two scales is also good using factor analysis. (KMO value of SC-IQ is 0.921, Bartlett's sphericity test P<0.001, KMO value of MSQ is 0.954, Bartlett's sphericity test P <0.01).

Characteristics of Pharmacists

365 pharmacists were included in this research. According to China Health Statistics Yearbook (2021 edition),[47] there are 142 pharmacists, 120 pharmacists, and 103 pharmacists came from the eastern region, the western region, and the central region respectively. The main characteristics of primary healthcare pharmacists are found in Table 1 (full details are

Table 1 Characteristics of Pharmacists in Primary Healthcare Institutes (N=365)

Item	Value	
Age, mean (SD)	37.8	8.7
Annual income (10 thousand), mean (SD)	7.7	6.3
Years of practicing as a PHI pharmacist, mean (SD)	12	8.1
Job satisfaction, mean (SD)	3.8	0.5
Sex, n (%)		
Male	128	35.1
Female	237	64.9
Marital status, n (%)		
Unmarried	60	16.4
Married	297	81.4
Other conditions (divorced, widowed, etc.)	8	2.2
Education background, n (%)		
Lower than college degree	38	10.4
College degree	111	30.4
Bachelor's degree	196	53.7
Master's degree	19	5.2
Doctoral degree	1	0.3
Title, n (%)		
No title	66	18.1
Junior title	203	55.6
Intermediate title	67	18.4
Deputy senior title	24	6.6
Senior title	5	1.4
Technical titles, n (%)		
No professional or technical position	53	14.5
Pharmacist	42	11.5
Assistant pharmacist	174	47.7
Pharmacist in charge	67	18.4
Deputy Chief Pharmacist	24	6.6
Chief Pharmacist	5	1.4

provided in Appendix 1). The mean age of the participants was 37.8 years (SD = 8.7). And their mean annual income was 77 thousand CNY (SD = 63). Among the participants, the married made up the most (81.4%) and approximately half of them were female (64.9%), which was basically consistent with the existing research results.[2,56]

Regression Analysis

The results of the regression analysis are provided in Table 2. The adjusted R^2 of the model 1 and model 2 were 0.221 and 0.321 respectively. Model 2 indicated a better explanation of the dependent variable. Job titles and technical titles were removed for potential existing multicollinearity. The results were relatively robust among the models. In the subsequent sections, the model 2 is the focus of interpretation.

Table 2 Regression Analysis of Factors Associated with Satisfaction Score of Pharmacists in Primary Healthcare Institutes (N = 365)

Items	Model 1			Model 2		
Model P value	< 0.001			< 0.001		
R^2	0.242			0.379		
Adjusted R^2	0.221			0.321		
	Coef.	**P value**	**95% CI**	**Coef.**	**P value**	**95% CI**
Constant term	1.91	0.00	1.393 to 2.425	2.34	0.00	1.722 to 2.950
Age	0.00	0.57	−0.005 to 0.009	0.00	0.95	−0.012 to 0.011
Sex (ref = male)	−0.09	0.05	−0.186 to 0.000	−0.08	0.11	−0.172 to 0.017
Annual income	−0.01	0.09	−0.016 to 0.001	−0.01	0.02	−0.017 to −0.002
Marital status (ref = unmarried)						
Married	−0.03	0.75	−0.189 to 0.136	0.01	0.92	−0.147 to 0.163
Others (divorced, widowed, etc.)	0.18	0.12	−0.048 to 0.406	0.04	0.76	−0.225 to 0.309
Education background (ref = lower than college degree)						
College degree	−0.01	0.92	−0.188 to 0.170	0.09	0.33	−0.091 to 0.271
Bachelor's degree	0.02	0.81	−0.160 to 0.205	0.12	0.21	−0.065 to 0.296
Master's degree	0.11	0.36	−0.128 to 0.355	0.20	0.14	−0.067 to 0.462
Doctoral degree	−0.07	0.52	−0.286 to 0.144	0.12	0.43	−0.176 to 0.417
Social capital score of PHI	0.56	0.00	0.440 to 0.670	0.51	0.00	0.399 to 0.628
Years of practicing as a PHI pharmacist				0.00	0.75	−0.009 to 0.013
Experienced a doctor-patient dispute in the past year (ref = no)				0.11	0.04	−0.005 to 0.206
Job requiring night shifts (ref = no)				−0.07	0.14	−0.156 to 0.022
Obtain a licensed pharmacist certificate (ref = no)				0.00	0.94	−0.108 to 0.116
Qualified to practice as a pharmacist by title (ref = no)				−0.20	0.04	−0.377 to −0.014
Qualified as a practicing pharmacist (ref = no)				−0.10	0.17	−0.238 to 0.042
Obtained clinical pharmacist (job training) certificate (ref = no)				0.06	0.26	−0.046 to 0.166
Weekly working hours (ref = ≤35)						
35 −40				−0.22	0.00	−0.368 to −0.065
≥40				−0.27	0.00	−0.416 to −0.118
Occupational subcategory (ref = pharmacists)						
Pharmacist of traditional Chinese medicine				0.08	0.17	−0.033 to 0.188
Pharmacist of ethnic medicine				−0.11	0.76	−0.842 to 0.616
Form of employment (ref =permanent staff)						
Under contract				−0.13	0.01	−0.224 to −0.033
Interns or temporary workers				−0.46	0.00	−0.763 to −0.164

(*Continued*)

Table 2 (Continued).

Items	Model 1	Model 2		
Access to the field of pharmacy (ref = college pharmacy graduate)				
Pharmacy education for non-pharmacists	−0.10	0.53	−0.405 to 0.208	
Pharmacy Correspondence Education	0.00	0.98	−0.152 to 0.156	
Pharmacy Apprenticeship	0.35	0.22	−0.084 to 0.780	
Non-pharmacy staff to pharmacy	−0.06	0.48	−0.230 to 0.109	
Hospital restructuring of pharmacy administration	−0.08	0.49	−0.328 to 0.158	
Trainings attended in the last 3 years (ref = less than or equal to 1 time)				
2–3	0.02	0.74	−0.091 to 0.128	
4–5	0.21	0.00	0.071 to 0.354	
≥6	0.12	0.10	−0.020 to 0.251	

Social Capital of PHI

Table 2 showed that the higher the social capital stock of PHI, the higher the job satisfaction level of pharmacists is (coef. 0.51 [95% CI 0.399 to 0.628], P<0.01), which confirmed the hypothesis of this study.

Other Factors

In addition, the regression analysis revealed some other factors significantly associated with the job satisfaction of pharmacists in PHI. Pharmacists who acquire a license might have lower job satisfaction level than those who do not have one (coef. −0.2 [95% CI −0.377 to −0.014], P<0.05).

The number of working hours per week had a significant impact on pharmacists' job satisfaction. Pharmacists who worked 35–40 hour per week had lower job satisfaction scores compared to those who worked 35 hours or less per week (coef. −0.22 [95% CI −0.368 to −0.065], P<0.01). Pharmacists who worked more than 40 hours per week also have lower levels of job satisfaction than pharmacists who work 35 hours or less (coef. −0.27 [95% CI −0.416 to −0.118], P<0.01).

The form of employment of pharmacists had a significant impact on the job satisfaction of pharmacists in PHI. Compared to permanent staff, pharmacists on contract (coef. −0.13 [95% CI −0.224 to −0.033], P<0.05), interns and temporary workers (coef. −0.46 [95% CI −0.763 to −0.164], P<0.01) had lower level of job satisfaction.

When exploring the impact of the dispute between pharmacists and patients on their job satisfaction, pharmacists who experienced a doctor-patient dispute in the past year had higher levels of job satisfaction than pharmacists who did not (coef. 0.11 [95% CI 0.005 to 0.206], P<0.05).

Furthermore, correlation existed between the number of training sessions in the past 3 years and the job satisfaction of PHI' pharmacists. Compared to pharmacists who did not attend any training or just attended once in the past 3 years, those who attended 4–5 trainings in the past 3 years had significantly higher level of job satisfaction (coef. 0.21 [95% CI 0.071 to 0.354], P<0.01).

Discussion

This article firstly examined the correlation between social capital and pharmacist job satisfaction in PHI, bringing insights and inspirations on social capital in the medical and health field. The distribution of gender, age, job title, educational background and years of working of the sample in this study is similar to the sample indicators in the 2019 National Research Report on the Status of Pharmaceutical Services in China's PHI,[57] indicating that the sample in this study is representative to a certain extent. The results revealed that the higher the level of social capital in PHI, the higher the job satisfaction of pharmacists is. In addition, the job satisfaction of pharmacists in PHI was also related to the weekly working hours of pharmacists, employment form, the number of training times in the past three years, whether they are licensed pharmacists, and whether there has been a doctor-patient dispute in the past year.

How Social Capital Facilitates Pharmacists' Job Satisfaction

The core proposition of social capital theory is that resources are generated through social interactions in networks of interpersonal and organizational relationships with trust as a core, which constitute the premise for the development and maintenance of social capital.[58,59] The workplace can provide opportunities for long-term interaction, communication, and socialization, thereby providing the basis for the creation of social capital.[60] As a kind of resources, the richer the social capital is, the more productive the institution or organization may become.[59] From the social capital perspective, trust is an extremely valuable component of social capital and people are more likely to work with people they trust.[61] Trust can be divided into affective trust and cognitive trust.[62] Therefore, this study believes that the social capital of PHI enhances pharmacists' job satisfaction by the affective and cognitive trust generated during the work. And mutual reciprocity, another element of institutional social capital, contributes to pharmacists' job satisfaction through resource mobilization in their interpersonal networks and strengthen the affective and cognitive trust between pharmacists and other personnels.

Affective Trust and Pharmacists' Job Satisfaction

Affect-based trust, a bond that arises from one's own emotions and other's feelings and motives, is one of the core elements of social capital and refers to trust from the heart[62] Based on the interpersonal network of primary pharmacists, we classify the emotional trust, namely affective trust as horizontal emotional trust and vertical emotional trust. On the one hand, with the development of a "patient-centered" work model, communication and collaboration between pharmacists, physicians and nurses will become increasingly frequent regarding prescription review and rational drug use. Therefore, pharmacists, physicians and nurses become more familiar with, understand and recognize each other because of the common goal of "serving patients", creating social capital in PHI and signifying a higher level of horizontal emotional trust between pharmacists and medical staff. The shared beliefs and values and a solid working atmosphere in the institution strengthen the pharmacists' job satisfaction. On the other hand, adequate social capital in PHI means a high level of vertical trust between the institution's employees and the managers, which signifying that the rules or regulations related to management, decision-making, training, promotion and welfare within the institution are fair and transparent. Therefore, pharmacists are more likely to have a sense of recognition and belonging to the institution, complete their work successfully, maintain a happy mood and have higher job satisfaction.

Cognitive Trust and Pharmacists' Job Satisfaction

Cognition-based trust, another core element of social capital, refers to trust "from the head" based on evidence of another's competence and reliability. It is an inference that one makes from the other's behavior under specific circumstances.[62] In the process of communication and collaboration, pharmacists will become familiar with the duties of physicians and nursing staff and form an awareness and judgment of their professional abilities. So do the physicians and nursing staff. This kind of understanding, recognition and trust between pharmacists and medical staff will help to improve communication and cooperation and enhance their work efficiency, which will consequently increase pharmacists' job satisfaction. A typical scenario is that currently the physician is responsible for both diagnosing the disease and issuing prescriptions in outpatient clinic, including providing patient with guidance on the rational use of medication. If the physician and the pharmacist trust each other, which means that the physician believes that the pharmacist is competent enough to guide the patient in the rational drug use, the physician's workload will be reduced with no burden of consultation on drug use. Besides, the pharmacist is also able to fully play his or her role and provide more professional and systematic services to the patient, which is conducive to job satisfaction.

Reciprocity and Pharmacists' Job Satisfaction

Social exchange theory is one of the most influential conceptual paradigms for understanding workplace behavior which can be traced back to 1920s. It perceives social behavior as the result of a resource exchange process in which individuals or groups attempt to interact with others in order to get returns.[63] A network of resource exchange exists in PHI between pharmacists, physicians and nurses. In a "patient-centered" health service process, pharmacists and other health

professionals collaborate with each other out of the willingness to reciprocate, resulting in higher work performance job satisfaction of pharmacists. In the process of reciprocal social exchange, pharmacists, physicians and nursing staff become closer to each other emotionally and become familiar with other people's work. Therefore, the emotional trust and cognitive trust will both increase in PHI. The above analysis shows that the increase in the level of emotional and cognitive trust in PHI will help to improve the job satisfaction of pharmacists. In other words, under the perspective of social exchange theory, the reciprocity between pharmacists and medical staff will improve the job satisfaction of primary pharmacists by increasing emotional and cognitive trust.

Implications: Other Factors That May Affect Pharmacists' Job Satisfaction

In addition to the social capital of PHI, the relationship between other factors and the job satisfaction of pharmacists is also worth exploring. The research results suggested that obtaining the professional pharmacist qualification would reduce the job satisfaction of pharmacists. It is possibly because that the current job is difficult to meet their psychological expectations with the professional pharmacist qualification certificate. The employment form of pharmacists also affected job satisfaction. The job satisfaction of contract pharmacists, interns and temporary workers was lower. With a more significant coefficient of temporary workers, pharmacists in PHI attach great importance to the stability of their work. Compared with pharmacists who had not experienced doctor-patient disputes in the past year, pharmacists who had experienced doctor-patient disputes were more satisfied with their job. Probably because pharmacists with doctor-patient experience are more aware of the importance and distinctiveness of their work and have a sense of work responsibility. These factors influencing job satisfaction of pharmacists in primary care can be further explored in future studies.

Practical Suggestions on Improving Social Capital in PHI

Investing in social capital in PHI is a valuable investment. The cultivation of social capital requires the participation of multiple stakeholders. From the pharmacists' perspective, the construction of collective beliefs, values and mutual trust, which are the core elements of organizational level of social capital, requires the participation of pharmacists. The work of pharmacists consists of communication and cooperation with nursing staff, physicians and other subjects, which requires flexible interpersonal skills and the understanding of their partners' work habits and content. Therefore, actively interacting and cooperating, participating in group building activities and enthusiastically helping partners solve problems encountered in their work is conducive to improving the social capital of PHI. From the perspective of PHI, social capital in the workplace is seen as a collaborative atmosphere, characterized by mutual trust and justice.[64,65] This trust includes both horizontal trust among staff and vertical trust between staff and managers. The establishment of clear, fair and transparent work systems, evaluation and promotion systems and management systems can reinforce the concept of fairness in PHI. Besides, a two-way communication and feedback mechanism between staff and managers, regular team building, and recognized institution's work philosophy are conducive to increasing the level of trust in the institution and the stock of social capital in the institution. From the perspective of policy makers, the enhancement of social capital in PHI requires the support of macro policy to stipulate the content and frequency of team building projects and increase investment in social capital cultivation projects. In short, adequate institutional social capital can improve pharmacists' job satisfaction, which benefits their physical and mental health, work efficiency and service quality.

Limitations and Avenues for Future Research

This study also has some limitations. First, the principle of convenience sampling may lead to insufficient generalizability of the findings. However, the sociodemographic information of the sample was relatively consistent with the sociodemographic information of pharmacists in PHI reported in previous studies,[56,57] therefore, the research results are representative to a certain extent. Secondly, this study was an initial attempt to apply the SOCAPO-E scale in the context of Chinese culture. Although the SOCAPO-E scale provided an alternative for the measurement of social capital in Chinese medical and health institutions and the results showed that it had good adaptability in China, it could not be ignored that it was originally developed in Germany and the version used in this study was translated from English to Chinese. Although the reliability and validity of this version had been proved in this study, there could still be inaccuracy

associated with the use of this translated instrument without being tested among a larger sample with formal validation analyses. Besides, the relatively long timespan needed to finish the questionnaire may cause inaccuracy as well. Thirdly, the final sample size is small limited by the research conditions although it was a nationwide study, so that the extrapolation might be unreliable. Finally, this study confirms that social capital in primary health care can improve pharmacists' job satisfaction, in line with the results of similar studies in other countries.[19,32] However, as a concept reflecting collective beliefs, trust and values, the level of institutional social capital may be influenced by cultural differences across countries or regions. Whether the Chinese culture, which encourages the preciousness of harmony, helps to enhance the cultivation of social capital has not been empirically tested and requires further research.

Conclusion

This representative study proved that the hypothesis that social capital is positively related to pharmacist job satisfaction in PHI, providing insights and inspirations for researches on social capital in the medical and health field. It also can be learned that investing in social capital in primary healthcare institutions is a valuable investment in the social system of China. As for the covariates, the job satisfaction of pharmacists in PHI was also related to the weekly working hours of pharmacists, employment forms, the number of training times in the past three years, whether they have been qualified to practice as a pharmacist by title, and whether there has been a doctor-patient dispute in the past year. Therefore, the social capital and covariates all need special attention from officers, researchers and pharmacists to increase the level of job satisfaction, promoting the health services from PHI and public health condition.

Data Sharing Statement

The data that support the findings of this study are available from the Research Center of National Drug Policy & Ecosystem of China Pharmaceutical University. Data and any supplementary material related to this article can be obtained from the correspondence author, Xiaoyu Xi, on request.

Ethics Approval and Consent Informed Consent

This study was approved by the Ethics Committee of China Pharmaceutical University (approval no. CPU2019015). We certify that the study was performed in accordance with the 1964 declaration of HELSINKI and later amendments. Written informed consent was obtained from all the participants prior to the enrollment of this study.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Health Commission of Hubei Province. Provisions on the administration of pharmaceutical affairs of primary medical and health institutions in Hubei Province (for trial implementation); 2019. Available from: https://wjw.hubei.gov.cn/zfxxgk/zc/gfwj/201911/t20191119_1450881.shtml. Accessed February 28, 2023.
2. Huang QX, Lu MQ, Xu AL, Xi XY. Survey and consideration on the current situation of service ability and pharmaceutical service construction of primary healthcare institutions in Jiangsu province. *China Pharm*. 2019;30(23):6.

3. Hu Q, Wang D, Zhao J. Investigation on knowledge structure and job satisfaction rate of grassroots pharmacy staff from eight provinces in China. *Anhui Med Pharm J*. 2021;25(7):1467–1470.
4. Yu ZY, Wang Y, Wang YY, Tian DS, Chen BT. Investigation on the status quo of community pharmacy services in Guangdong province. *Health Vocat Educ*. 2021;39(7):144–146.
5. An J, Liu Y, Sun YJ, Liu C. Impact of work-family conflict, job stress and job satisfaction on seafarer performance. *Int J Environ Res Public Health*. 2020;17(7):2191. doi:10.3390/ijerph17072191
6. Judge TA, Thoresen CJ, Bono JE, Patton GK. The job satisfaction–job performance relationship. *Psychol Bull*. 2001;127(3):376–407.
7. Grol R, Mokkink H, Smits A, et al. Work satisfaction of general practitioners and the quality of patient care. *Fam Pract*. 1985;2(3):128–135.
8. Linn LS, Brook RH, Clark VA, Davies AR, Fink A, Kosecoff J. Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care*. 1985;23(10):1171–1178.
9. Weisman CS, Nathanson CA. Professional satisfaction and client outcomes: a comparative organizational analysis. *Med Care*. 1985;23 (10):1179–1192.
10. Dimatteo MR, Sherbourne CD, Hays RD, Ordway L, Rogers WH. Physicians' characteristics influence patients' adherence to medical treatment: results from the medical outcomes study. *Health Psychol Offi J Division Health Psychol Am Psychol Assoc*. 1993;12(2):93. doi:10.1037/0278-6133.12.2.93
11. Haas JS, Cook EF, Puopolo AL, Burstin HR, Cleary PD, Brennan TA. Is the professional satisfaction of general internists associated with patient satisfaction? *J Gen Intern Med*. 2000;15(2):122–128. doi:10.1046/j.1525-1497.2000.02219.x
12. Kvist T, Voutilainen A, M?Ntynen R, Vehvil Inen-Julkunen K. The relationship between patients' perceptions of care quality and three factors: nursing staff job satisfaction, organizational characteristics and patient age. *BMC Health Serv Res*. 2014;14(1):466.
13. Robert D. Bowling alone: America's declining social capital. *J Democr*. 1995;1995:1.
14. Kwak C, Chung BY, Xu Y, Eun-Jung C. Relationship of job satisfaction with perceived organizational support and quality of care among South Korean nurses: a questionnaire survey. *Int J Nurs Stud*. 2010;47(10):1292–1298.
15. Song X, Xiang M, Liu Y, Yu C. Relationship between job satisfaction and burnout based on a structural equation model. *J Occup Environ Med*. 2020;62:12.
16. Yang L, Lian ZW, Chen XY, et al. Analysis of job satisfaction and influence factors for primary health care staff in China. *Chin Health Qual Manag*. 2020;27(2):4.
17. Fang P, Luo Z, Zi F. What is the job satisfaction and active participation of medical staff in public hospital reform: a study in Hubei province of China. *Hum Resour Health*. 2015;13(1):1–14.
18. Ge B. Analysis on job satisfaction of pharmacy workers in township hospitals in Gansu province. *Chin Health Qual Manag*. 2015;22(1):4.
19. Berthelsen H, Owen M, Westerlund H. Does workplace social capital predict care quality through job satisfaction and stress at the clinic? A prospective study. *BMC Public Health*. 2021;21:1.
20. Jiang JY, Liu C-W. High performance work systems and organizational effectiveness: the mediating role of social capital. *Hum Resour Manag Rev*. 2015;25(1):126–137.
21. Ommen O, Driller E, Khler T, et al. The relationship between social capital in hospitals and physician job satisfaction. *BMC Health Serv Res*. 2009;9(1):81.
22. Ommen O, Driller E, Koehler T, et al. The relationship between social capital in hospitals and physician job satisfaction. *BMC Health Serv Res*. 2009;9:1.
23. Mohsenzadeh M, Ahmadi F. Social Capital and its Impact on Job Satisfaction. *Life Sci J*. 2013;10(1):469–475.
24. Bo W. Theoretical exploration: the theoretical exploration of cooperative medical care. *China Health Res*. 1999;2(3):18–20.
25. Lu ZX. Social capital and its health function. *Med Soc*. 2000;13(1):3.
26. Bai Y. *Social Capital and Using Strategy of Social Health Resources*. Huazhong University of Science & Technology; 2006.
27. Yu QQ. *The Influence Research About Social Capital to Health of Rural Resident in Shandong Province*. Shandong University; 2006.
28. Tao GG. Social capital analysis on doctor patient relationship. *Chin J Health Policy*. 2010;3(3):58–62.
29. Putnam RD. *Democracies in Flux*. Oxford Usa Trade; 2013.
30. Bai Y, Liang Y, Lu ZX. Indicators of social capital in health care field. *Chin J Soci Med*. 2007;2007(1):4.
31. Adler PS, Kwon S-W, Heckscher C. Perspective—professional work: the emergence of collaborative community. *Organ Sci*. 2008;19(2):359–376.
32. Stromgren M, Eriksson A, Bergman D, Dellve L. Social capital among healthcare professionals: a prospective study of its importance for job satisfaction, work engagement and engagement in clinical improvements. *Int J Nurs Stud*. 2016;53:116–125.
33. Badura B, Hehlmann T. *Betriebliche Gesundheitspolitik*. Springer Berlin Heidelberg; 2003.
34. Hao J, Qiao LJ, Huang HT, Zhang R, Chen XL, Ma RR. Construction of hospital pharmacist job satisfaction scale by Delphi method and analytic hierarchy process. *Chin J Hosp Pharm*. 2021;41(2):7.
35. Xu X, Jia MM, Gu J, Huang H, Lyu MM, Ding XY. The investigation and analysis of job satisfaction of employees under the background of new medical reform in a district of Nanjing community health service institution. *Sys Med*. 2017;2(20):4.
36. Roh E-K, Shin S-O. The influence of job stress, DISC behavioral type and organizational social capital on job satisfaction among some nurses. *Korean J Hosp Med*. 2015;20(4):14–30.
37. Str Mgren M, Eriksson A, Bergman D, Dellve L. Social capital among healthcare professionals: a prospective study of its importance for job satisfaction, work engagement and engagement in clinical improvements. *Int J Nurs Stud*. 2015;116:1.
38. Shin JI, Lee E. The effect of social capital on job satisfaction and quality of care among hospital nurses in South Korea. *J Nurs Manag*. 2016;2016:1.
39. Han J, Cho J. The effect of organizational social capital on job stress, job satisfaction and turnover intention: focusing on dental hygienists. *Korean Manag Consult Rev*. 2018;18(4):187–195.
40. Juteng RNG, Jaldestad E, Dellve L, Eriksson A. The potential importance of social capital and job crafting for work engagement and job satisfaction among health-care employees. *Int J Environ Res Public Health*. 2020;17(12):4272.
41. Coleman JS. Grundlagen der Sozialtheorie [Foundations of Social Theory]. Handlungen und Handlungssysteme. *J Hellenic Stud*. 1991;1991:5.
42. Putnam RD, Leonardi R, Nanetti RY. *Making Democracy Work*. Princeton university press; 1994.
43. Fukuyama F. Social capital, civil society and development. *Third World Q*. 2001;22(1):7–20.

44. Badura B, Schellschmidt H, Vetter C. *Fehlzeiten-Report 2004: Gesundheitsmanagement in Krankenhäusern und Pflegeeinrichtungen Zahlen, Daten, Analysen aus allen Branchen der Wirtschaft*. Springer; 2005.
45. Pfaff H, Badura B, Pühlhofer F, Siewerts D. Das Sozialkapital der Krankenhäuser — wie es gemessen und gestärkt werden kann. Fehlzeiten-Report ; 2004.
46. Kouvonen A, Kivim Ki M, Vahtera J, et al. Psychometric evaluation of a short measure of social capital at work. *BMC Public Health*. 2007;7 (1):1–2.
47. National Health Commission of the People's Republic of China. China health statistical yearbook: China health statistical yearbook; 2021.
48. Grootaert C, Narayan D, Nyhan-Jones V, Woolcock M Measuring social capital, an integrated questionnaire. Word Bank Working Paper No. 18; 2004.
49. Silva M, Huttly SR, Harpham T, Kenward MG. Social capital and mental health: a comparative analysis of four low income countries. *Soc Sci Med*. 2007;64(1):5–20.
50. Sheingold BH, Sheingold SH. Using a social capital framework to enhance measurement of the nursing work environment. *J Nurs Manag*. 2013;21 (5):790–801.
51. Ansmann L, Hower KI, Wirtz MA, Kowalski C, Pfaff H. Measuring social capital of healthcare organizations reported by employees for creating positive workplaces - Validation of the SOCAPO-E instrument. *BMC Health Serv Res*. 2020;20:1.
52. Bauman Z. Community: seeking Safety in an Insecure World. *Contemp Sociol*. 2001;31:4.
53. Kacel B, Miller M, Norris D. Measurement of nurse practitioner job satisfaction in a midwestern state. *J Am Acad Nurse Pract*. 2005;17(1):27–32.
54. Wu HY, Ding J, Luo CJ, Wang ZL, Qi RW, Ding GW. Development of TCM job satisfaction scale based on confirmatory factor analysis. *Chin J Health Stat*. 2019;2019(1):4.
55. Weiss DJ, Dawis RV, England GW. Manual for the Minnesota satisfaction questionnaire. *Minnesota Studies Vocat Rehab*. 1967;1967:55.
56. Xu XQ. Pharmacist job satisfaction survey and correlation analysis. *J Electrocardiol*. 2020;9(3):2.
57. Huang YK, Liu HJ, Leng ML, Wang XX, Li WJ, Xi XY. National survey on pharmaceutical care of primary healthcare institutions in China: part 2. staffing of pharmacist team. *Chin J Hosp Pharm*. 2019;2019:1.
58. Bourdieu P, Richardson JG. *Handbook of Theory and Research for the Sociology of Education*. Greenwood Press New York; 1986.
59. Putnam RD. *Bowling Alone: The Collapse and Revival of American Community*. Simon and schuster; 2000.
60. Nahapiet J, Ghoshal S. Social capital, intellectual capital, and the organizational advantage. *Acad Manag Rev*. 1998;23(2):242–266.
61. Drolet AL, Morris MW. Rapport in conflict resolution: accounting for how face-to-face contact fosters mutual cooperation in mixed-motive conflicts. *J Exp Soc Psychol*. 2000;36(1):26–50.
62. Chua R, Ingram P, Morris MW. From the head and the heart: locating cognition- and affect-based trust in managers' professional networks. *Acad Manag J*. 2008;51(3):436–452.
63. Jie Y, Wang J, Wong C, Lai KH. Relational stability and alliance performance in supply chain. *Omega*. 2008;36(4):600–608.
64. Berthelsen H, Westerlund H, Pejtersen JH, Hadzibajramovic E. Construct validity of a global scale for workplace social capital based on COPSOQ III. *PLoS One*. 2019;14(8):e0221893.
65. Burr H, Berthelsen H, Lluís S, Nübling M, Pohrt A. The third version of the Copenhagen psychosocial questionnaire. *Saf Health Work*. 2019;2019:1.