Malaysian Family Physician
Official Journal of the Academy of Family Physicians of Malaysia
and Family Medicine Specialist Association of Malaysia

ORIGINAL ARTICLE

Patients' satisfaction on primary healthcare services in China and its associated factors during COVID-19 pandemic: A cross-sectional study

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Li H, Swe KMM, Jabbar MA, et al. Patients' satisfaction on primary healthcare services in China and its associated factors during Covid-19 pandemic: A cross-sectional study. *Malays Fam Physician.* 2023;18:4. https://doi.org/10.51866/oa.194

Keywords:
Community health service, Patient satisfaction, China, COVID-19

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Abstract

Introduction: The provision of a satisfactory service by community healthcare centres in China plays an important role in the prevention and control of communicable diseases, especially during the COVID-19 pandemic. However, there is a lack of study in this field. This study aimed to determine the level of patient satisfaction with primary healthcare services in China and its associated factors during the COVID-19 pandemic.

Methods: This cross-sectional study was conducted at 10 primary healthcare clinics in Xi'an, China. The 18-Item Patient Satisfaction Questionnaire was used for data evaluation and SPSS version 23.0 for data analysis.

Results: A total of 315 patients were recruited. The overall patient satisfaction score was 26.1±3.1. In the multiple linear regression analysis, the highly educated patients had a higher patient satisfaction score than the low-educated patients (β=1.138, 95% confidence interval=0.135–2.141, P=0.026).

Conclusion: The overall patient satisfaction level of the patients who attended community healthcare centres in Xi'an was high. The patients with a higher educational level showed a higher patient satisfaction level than did those with a lower educational level.

Introduction

With improvements in living standards, the demand for medical care and healthcare is increasing, especially primary healthcare services. The formation of primary healthcare service enterprises guarantees the improvement of people's health and is an important indicator of the development level of a country's medical and health undertakings. The Declaration of Alma-Ata defines primary healthcare as 'essential healthcare' that is based on scientifically sound and socially acceptable methods and technologies. This makes universal healthcare accessible to all individuals and families in a community.[1] Primary healthcare acts as a gatekeeper in a country's healthcare system, as it focuses on health promotion, disease prevention, treatment, rehabilitation and palliative care.[3]

In China, community healthcare centres are an essential part of community construction. They involve the rational use of community resources and appropriate technologies, with primary healthcare institutions as the main body and general practitioners as the backbone, under the guidance of government leadership, community participation and higher-level healthcare institutions. With the deepening of health reform, the primary health care service shows that the government takes the lead to improve the primary health care network system and the continuous expansion of service items and methods have a certain impact on use of primary health care.[4]

The Xi'an Community Health Service Centre provides services for more than 10 million people. Since the start of the COVID-19 pandemic, community healthcare service centres have been at the forefront of pandemic prevention and control, serving as the goalkeeper of people's health. Healthcare service providers undertake public health services, health testing, vaccination, quarantine hotel management and other work and travel to residential communities and provide door-to-door medical services. In a survey, medical staff yielded higher patient satisfaction levels with their sincere and meticulous service. However, during the pandemic period, the national health department stipulated that some diseases

related to pandemic prevention and control could not be treated in community hospitals, which caused dissatisfaction in some patients.[2,5]

Patient satisfaction is an important measure in evaluating healthcare systems and in predicting health outcomes. One critical setting within healthcare systems is primary care, where patient interactions may yield differences in the perceived quality of healthcare or satisfaction. As the basic criterion for acquiring information regarding the extent of reaching expectations, patient satisfaction is a crucial indicator for the assessment of the gatekeeper policy in China.[3,4,5] Patient satisfaction involves understanding patients' needs and expectations from their perspective, considering patients' needs in the actual medical care process, analysing the factors influencing patient satisfaction, objectively assessing the status quo and existing problems of primary healthcare services and examining measures to improve the quality of medical care and factors associated with patient satisfaction.[6,10] This study aimed to evaluate patient satisfaction with primary healthcare services in Xi'an, China, and its associated factors during the COVID-19 pandemic.

Methods

Design, setting and participants

As a provincial capital in northwest China, Xi'an has been in a key position during the COVID-19 pandemic. This cross-sectional study was conducted at 10 primary healthcare service centres in Xi'an, China, in 2020. Participants were recruited from May to July 2021. Patients who visited the primary healthcare centres, were aged above 18 years, were conscious and were able to understand the questionnaire correctly were included. Patients with difficulties in language communication, severe mental disorders or cognitive disorders and those who were unable to cooperate with the researchers were excluded.

Sample size calculation

The sample size was calculated using the following estimation formula:
N=(Z1-α)2(P(1-P)/D2)
Z1-α=1.96 (95% confidence interval)
Population proportion P=(0.40) (40% of a high patient satisfaction proportion)25
D=0.05 (5% absolute precision)
N=(Z1-α)2(P(1-P)/D2
N=246
N=approximate 300 (including 20% attrition rate)

We randomly selected 10 primary healthcare institutions using a randomiser calculator and recruited 30 patients from each centre, totalling 300 patients.

Study instruments

This study used a questionnaire consisting of two parts. The first part included items on sociodemographic factors and self-reported mental health and physical condition.[24] The second part included the 18-Item Patient Satisfaction Questionnaire (PSQ-18). [11]

PSQ-18

The validated PSQ-18 was used to assess patient satisfaction with primary healthcare services. It consists of a total of 18 items in 7 dimensions, which measure general satisfaction (2 items), technical quality (4 items), interpersonal attitudes (2 items), communication (2 items), financial aspects (2 items), time spent with doctors (2 items) and access and convenience (4 items). These items are rated on a 5-point Likert scale, with scores ranging from 1 (strongly agree) to 5 (strongly disagree).[7,11] The Chinese version of the PSQ-18 was adopted from the original English version and validated in China after repeated discussions for validity and modification. The Chinese version has been shown to be reliable with a Cronbach's α of 0.791.

The scores for item numbers 1, 2, 3, 5, 6, 8, 11, 15 and 18 were converted from the original scores (1 to 5, 2 to 4, 3 to 3, 4 to 2 and 5 to 1), while those for item numbers 4, 7, 9, 10, 12, 13, 14, 16 and 17 remained the same.[11]

Data collection

Four enumerators were used to collect the data. All of them underwent a unified training, used unified questionnaires in accordance with unified guidelines and were based on anonymous surveys after obtainment of informed consent from the participants.

During data collection, the patients were selected randomly in accordance with the inclusion and exclusion criteria at the waiting area of the primary healthcare centres. The respondents were informed that participation to the investigation was voluntary and that their personal information would be kept strictly confidential. After consent was obtained, a face-to-face interview was conducted to collect the sociodemographic data and other information for the PSQ-18. Data on the mental health and physical condition of the respondents were

collected on the basis of self-reports. After the questionnaire was completed, it was sealed in an envelope and put in a designated ballot box for collection. Prior to data collection, all participants consented to participate in the study. To ensure the accuracy and reliability of the research data, we implemented strict quality control at each stage of the research.

Statistical analysis

SPSS was used to analyse the data. Continuous variables were described as means or medians and categorical variables as frequencies. A multiple linear regression analysis was performed to determine the predictors of the patient satisfaction score after adjusting for potential confounding factors, including age, gender and mental status.

Ethical approval

Prior to data collection, ethical approval was obtained from the Scientific Research and Ethics Committee of Universiti Tunku Abdul Rahman University (U/SERC/02/2021).

Results

Sociodemographic characteristics

The sociodemographic characteristics of the patients are shown in **Table 1**.

Two thirds of the study population was women (63.2%). The study population was generally young, with 46.4% of the patients aged from 18 to 47 years. The majority of the patients were married (88.3%), and almost half of them received tertiary education (47%).

Table 1. Sociodemographic characteristics of the participants (N=315).

Characteristic	n	%
Sex		
Male	116	36.8
Female	199	63.2
Age (year)		
18–47	147	46.6
48–64	107	34
≥65	61	19.4
Marital status		
Married	278	88.3
Single	15	4.8
Divorced/separated/widow	22	6.9
Per capita annual income (RMB)		
>150,000 yuan	20	6.3
60,000–150,000 yuan	126	40
24,000–60,000 yuan	121	38.4
<24,000 yuan	48	15.2
Number of household members		
≤3	172	54.9
>3	143	45.1
Highest educational level		
Primary/never been to school	42	13.30
Junior/senior high school	125	39.7
Junior college/higher	148	47.0
Health insurance		
Perfect	41	13.0
General	274	87.0
Mental health		
Very good/good	254	80.6
General	58	18.4
Not good/poor	3	1.0
Physical condition		
Very good/good	244	77.5
General	35	11.1
Not good/poor	36	11.5
Occupation		
Blue collar	143	45.4
Retired	92	29.2
White collar	51	16.2
Unemployed	27	8.6
Others	2	0.6

1 Yuan is equivalent to 0.66 MYR and 0.33 USD at the time of the study

Patient satisfaction with primary healthcare services

Table 2 shows the scores of the patient satisfaction with primary healthcare services. The overall patient satisfaction score was 26.1±3.1. Among all subdomains, the interpersonal manner had the highest score at 4.19±0.607. The mean score for general satisfaction was 3.68±0.716; technical quality, 3.66±0.609; interpersonal manner, 4.19±0.607; communication, 3.72±0.731; financial aspects, 3.65±0.786; time spent with doctors, 3.58±0.754; and accessibility and convenience, 3.69±0.567.

The Cronbach's α of all PSQ items was 0.791, while that of the subdomains ranged from 0.167 to 0.675, as shown in **Table 2**.

Table 2. Scores for each subdomain of patient satisfaction.

Subdomain	Cronbach's α	Mean±SD
General satisfaction	**0.343**	**3.68±0.716**
• The medical care I have been receiving is just about perfect.		3.88±0.75
• I am dissatisfied with some things about the medical care I receive.		3.48±1.07
Technical quality	**0.528**	**3.66±0.609**
• I think my doctor's office has everything needed to provide complete medical care.		3.49±0.86
• Sometimes, doctors make me wonder whether their diagnosis is correct.		3.48±1.00
• When I go for medical care, they are careful to check everything when treating and examining me.		3.85±0.80
• I have some doubts about the ability of the doctors who treat me.		3.84±1.02
Interpersonal manner	**0.675**	**4.19±0.607**
• Doctors act too business-like and impersonal towards me.		4.26±0.67
• My doctors treat me in a very friendly and courteous manner.		4.32±0.73
Communication	**0.167**	**3.72±0.731**
• Doctors are good about explaining the reason for medical tests.		3.49±0.99
• Doctors sometimes ignore what I tell them.		3.75±0.99
Financial aspects	**0.182**	**3.65±0.786**
• I feel confident that I can get the medical care I need without being set back financially.		3.60±1.11
• I have to pay for more of my medical care than I can afford.		3.7±0.99
Time spent with a doctor	**0.395**	**3.58±0.754**
• Those who provide my medical care sometimes hurry too much when they treat me.		3.64±1.00
• Doctors usually spend plenty of time with me.		3.53±0.90
Accessibility and convenience	**0.440**	**3.69±0.567**
• I have easy access to the medical specialists I need.		2.98±0.91
• Where I get medical care, people have to wait too long for emergency treatment.		4.00±0.99
• I find it difficult to get a medical appointment right away.		4.01±1.00
• I am able to get medical care whenever I need it.		3.79±0.78
Total score	**0.791**	**26.1±3.1**

SD: Standard deviation

For the total patient satisfaction score, the variables with P<0.25 were included in the multiple linear regression analysis (i.e. age, gender, educational level and mental state) (**Table 3**).

Table 3. Univariate linear regression analysis of patient satisfaction with primary healthcare services (N=315).

Overall patient satisfaction score		P-value
Variable	Unstandardised β	
Age	−0.022	0.050
Gender	0.597	0.098
Educational level	1.138	0.026*
Health insurance	−0.378	0.466
Marital status	0.06	0.912
Number of household members	−0.079	0.823
Occupation	−0.021	0.957
Annual income	0.065	0.853
Mental state	−0.692	0.117
Physical condition	0.192	0.726

*P<0.05

Predictors of patient satisfaction with primary healthcare services in the multiple linear regression analysis

Table 4. Multiple linear regression analysis of the predictors of overall patient satisfaction with primary healthcare services (N=315).

	Unstandardised β	Standard error	Standardised β	t	P-value	95% confidence interval for β	
						Lower Bound	Upper Bound
Secondary school education and above, primary school education and below	1.138	0.51	0.125	2.233	0.026*	0.135	2.141

*P<0.05 after adjustments for age, gender, educational level and mental state

As shown in Table 4, the patients who received secondary school education and above had a higher level of patient satisfaction than those who received primary school education and below (β=1.138, 95% confidence interval=0.135–2.141, P=0.026).

Discussion

Sociodemographic characteristics

This study aimed to examine patient satisfaction with primary healthcare services in Xi'an, China, and its associated factors. A total of 315 patients participated in this study.

Patient satisfaction with primary healthcare services

The patient satisfaction score in our study is consistent with that in another study conducted in 2017 at another community health centre in Shenzhen, China. The study in Shenzhen showed that patients' interpersonal communication skills (3.7±0.6) and doctor–patient communication (3.7±0.5) yielded the highest satisfaction scores; in contrast, service accessibility yielded the lowest score (3.4±0.5).[14] These results are similar to our data in which the mean score was the highest in the interpersonal subdomain (4.2±0.6), followed by the communication subdomain (3.7±0.7). The improvement in satisfaction with service accessibility may be related to the rapid development of community healthcare service centres in China in recent years. Another study conducted in 2015 in an outpatient clinic in Malaysia showed that technical quality yielded the highest score (14.2±1.8), followed by accessibility and convenience of medical services (10.9±2.4); the time spent with doctors during consultation yielded the lowest score (5.7±1.3).[12]

During the COVID-19 pandemic, the general public lacks sufficient understanding of the pandemic and is anxious despite the inevitable external factors and short-term shortage of medical supplies. Nevertheless, medical workers' actions to protect people's lives have generally been recognised by patients, and patient satisfaction with doctors' services has improved.

Relationship between the demographic characteristics and primary healthcare service satisfaction

In the multiple regression analysis, there was a significant association found between the educational level and patient satisfaction with healthcare services (P=0.026); the patients with a higher educational level showed a higher satisfaction score than did their counterpart.

The findings are similar to those by Baltaci et al.: Patients who received university-level education had a higher level of satisfaction with patient communication than those who received middle and high school education (P=0.048).[15] This finding is attributed to the fact that patients with a higher educational level can easily communicate with physicians. Bu-Alayyan et al. also reported that patients with higher levels of education were more satisfied with primary healthcare services than their counterpart.[16]

The recent findings contrast with those by Jafari et al. stated that patients with higher levels of education had lower levels of satisfaction than their counterpart. This may be because patients with higher levels of education have better social life and higher expectations.[17] Hu, Elakkad, Chandra et al. and Al-Sakkak also reported that patients with a low educational attainment were more satisfied, presumably owing to their lower expectations, than their counterpart.[9,13,15,16]

In the multiple linear regression analysis, the other sociodemographic characteristics of the patients, including age, gender, income, occupation, physical condition, and mental health, were not associated with patient satisfaction.

We found that there was no significant association between patient satisfaction and age, similar to the findings by Baltaci et al.[15] In many studies, older patients have been shown to be more satisfied than younger patients. Hu et al., Ganasegeran et al, Chandra et al and Jaipaul et al showed that older age groups were more satisfied with their consultations than younger age groups. This may be because older age groups have lower expectations of their physicians than younger age groups.[9,12,18,20]

Herein, gender had no significant association with patient satisfaction. Similarly, Weisman et al. found that there were no major gender differences in satisfaction.[21] In contrast, Chandra reported that women were more likely to be completely satisfied with their consultation than men.[17]

The annual income was not also associated with satisfaction with healthcare services in the current study. Hu found that the higher the monthly household income, the higher the level of satisfaction with healthcare management and doctor–patient communication.[9] Baltaci et al. and Fong et al. also reported that patients with high income levels had higher patient satisfaction levels than their counterpart.[15,22] By contrast, Ganasegeran et al and Yan et al found that lower-income patients experienced higher service satisfaction levels than did higher-income patients ($P<0.001$).[12,23]

Strengths and limitations

The strength of this study was that the participants were randomly selected, and the survey was self-administered, minimising selection bias. However, the cross-sectional nature of the study and the self-reporting of data limit the ability to draw causal relationships. Furthermore, this study was conducted during the COVID-19 pandemic, when community healthcare service centres were responding to the occurrence of health emergencies. Another limitation was that the reason of visiting the primary healthcare clinics was not evaluated. Thus, the results must be interpreted cautiously.

Implications

The study findings, including the overall high level of patient satisfaction of the patients who attended community healthcare centres in Xi'an, are expected to lay the foundation for future interventional studies to identify effective interventions to improve the quality of primary healthcare, enhance the capacity of the primary healthcare sector to respond to health emergencies and provide a foundation for primary healthcare development in China.

Conclusion

The overall patient satisfaction level of the patients who attended community health centres in Xi;an was high, and the patients with higher educational levels showed higher patient satisfaction levels than did those with lower educational levels. The difficulties during the COVID-19 pandemic increased patients' understanding of their doctors.

Acknowledgements

None

Author contributions

As the paper was part of PhD thesis paper, all the authors have made a substantial contribution to the concept or design of the study, analysis, interpretation of data and writing the manuscript.

Ethical approval

The study was approved by the Scientific Research and Ethics Committee of Universiti Tunku Abdul Rahman University (U/SERC/02/2021).

Conflicts of interest

None

Funding

None

Data sharing statement

The raw data will be available upon request.

How does this paper make a difference in general practice?

- The study findings are expected to lay the foundation for future interventional studies to identify effective interventions to improve the quality of primary healthcare, enhance the capacity of the primary healthcare sector to respond to health emergencies and provide a basis for primary healthcare development in China.

References

1. World Health Organization. Primary health care: report of the international conference on primary health care, Alma-Ata, USSR. Geneva: World Health Organization; 1978. Accessed April 2022. https://apps.who.int/iris/handle/10665/39228.

2. Popular Science in China ·Science encyclopedia: Primary Health Care, Baidu encyclopedia, April 2021. Accessed April 2022 https://baike.baidu.com/item/%E5%88%9D%E7%BA%A7%E5%8D%AB%E7%94%9F%E4%BF%9D%E5%81%A5/8213336?fr=aladdin

3. World Health Organization. Primary health care. April 2021. Assessed April 2022. https://www.who.int/news-room/fact-sheets/detail/primary-health-care

4. Qingdao Municipal People's Government. Suggestions on further improving community health services. Qingdao Government Affairs Network, 2014. Accessed April 2022. https://baike.baidu.com/reference/10554491/dab4q89EO1fp-zicTfAzdAln_BHdPxU8D9k30vpB2MWQhjjn87uZV86BSk7po_3o7pIoILJzq36ljIv6sMEykQe9qsLTOUhe89zhQVhxZP70VSybBG2fXmbQtYDXXckxzzVsxwWXFqvnN2qITbq7SU

5. Shu Z. Satisfaction with primary health care services. *J Med Philos (Humanit and Soc Med)*.2011;(07):54-56.

6. Persai D, Balu RK, Singh K, et al. Patient Satisfaction with Quality of Primary Care Health services-findings from India. *Int J Health Plann Manage*. 2022;37(4):2256-2265. doi:10.1002/hpm.3467

7. Tierney E, McEvoy R, O'Reilly-de Brún M, et al. A critical analysis of the implementation of service user involvement in primary care research and health service development using normalization process theory. *Health Expect*. 2016;19(3):501-515. doi:10.1111/hex.12237

8. Li WZ, Gan Y, Zhou YF, et al. Factors Affecting Patient Satisfaction with Community Health Service under the Gatekeeper System: A Cross-sectional Study in Nanjing, China. *Biomed Environ Sci*. 2017;30(9):685-690. doi:10.3967/bes2017.092

9. Hu JL,Liu XY,Zhang YX,et al. Study on residents' satisfaction with community health service and its influencing factors based on PSQ-18 scale. *Modern Prev. Med*.2017; (11).

10. Ferreira PL, Raposo V, Tavares AI. Primary health care patient satisfaction: Explanatory factors and geographic characteristics. *Int J Qual Health Care*. 2020;32(2):93-98. doi:10.1093/intqhc/mzz134

11. Thayaparan AJ, Mahdi E. The Patient Satisfaction Questionnaire Short Form (PSQ-18) as an adaptable, reliable, and validated tool for use in various settings. *Med Educ Online*. 2013;18:21747. Published 2013 Jul 23. doi:10.3402/meo.v18i0.21747

12. Ganasegeran K, Perianayagam W, Manaf RA, Jadoo SA, Al-Dubai SA. Patient satisfaction in Malaysia's busiest outpatient medical care. *ScientificWorldJournal*. 2015;2015:714754. doi:10.1155/2015/714754

13. Zenger M, Schaefert R, van der Feltz-Cornelis C, Brähler E, Häuser W. Validation of the Patient-Doctor-Relationship Questionnaire (PDRQ-9) in a representative cross-sectional German population survey. *PLoS One*. 2014;9(3):e91964. Published 2014 Mar 17. doi:10.1371/journal.pone.0091964

14. Wu J, Zhang S, Chen H, et al. Patient Satisfaction with Community Health Service Centers as Gatekeepers and the Influencing Factors: A Cross-Sectional Study in Shenzhen, China. *PLoS One*. 2016;11(8):e0161683. Published 2016 Aug 23. doi:10.1371/journal.pone.0161683

15. Hemadeh R, Hammoud R, Kdouh O, Jaber T, Ammar L. Patient satisfaction with primary healthcare services in Lebanon. *Int J Health Plann Manage*. 2019;34(1):e423-e435. doi:10.1002/hpm.2659

16. Alotaibi M, Alazemi T, Alazemi F, Bakir Y. Patient satisfaction with primary health-care services in Kuwait. *Int J Nurs Pract*. 2015;21(3):249-257. doi:10.1111/ijn.12257

17. Jafari Kelarijani SE, Jamshidi R, Heidarian AR, Khorshidi M. Evaluation of factors influencing patient satisfaction in social security hospitals in Mazandaran province, North of Iran. *Caspian J Intern Med*. 2014;5(4):232-234.

18. Chandra S, Ward P, Mohammadnezhad M. Factors Associated With Patient Satisfaction in Outpatient Department of Suva Sub-divisional Health Center, Fiji, 2018: A Mixed Method Study. *Front Public Health*. 2019;7:183. Published 2019 Jul 2. doi:10.3389/fpubh.2019.00183

19. Al-Sakkak MA, Al-Nowaiser NA, Al-Khashan HI, Al-Abdrabulnabi AA, Jaber RM. Patient satisfaction with primary health care services in Riyadh. *Saudi Med J*. 2008;29(3):432-436.

20. Jaipaul CK, Rosenthal GE. Are older patients more satisfied with hospital care than younger patients?. *J Gen Intern Med*. 2003;18(1):23-30. doi:10.1046/j.1525-1497.2003.20114.x

21. Weisman CS, Henderson JT, Schifrin E, Romans M, Clancy CM. Gender and patient satisfaction in managed care plans: analysis of the 1999 HEDIS/CAHPS 2.0H Adult Survey. *Womens Health Issues*. 2001;11(5):401-415. doi:10.1016/s1049-3867(01)00093-7

22. Fong RL, Bertakis KD, Franks P. Association between obesity and patient satisfaction. *Obesity (Silver Spring)*. 2006;14(8):1402-1411. doi:10.1038/oby.2006.159

23. Yan Z, Wan D, Li L. Patient satisfaction in two Chinese provinces: rural and urban differences. *Int J Qual Health Care*. 2011;23(4):384-389. doi:10.1093/intqhc/mzr034

24. Zhang, W.X. Effects of social support and medical insurance on life satisfaction of the elderly. *Henan University*, 2019; Accessed September 2022. https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD202001&filename=1019195610.nh

25. He X, Li L, Bian Y. Satisfaction survey among primary health care outpatients in the backward region: an empirical study from rural Western China. *Patient Prefer Adherence*. 2018;12:1989-1996. Published 2018 Oct 2. doi:10.2147/PPA.S172021