Research Article

Influence of Perception on Service Satisfaction of Community Health Centers among Older Adults or their Families in Chongqing, China: A Path Analysis

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ABSTRACT

Background: CHCs have now served as the primary healthcare facilities especially for older adults in China. There is paucity in current literature about public satisfaction with CHC services from the perspective of subjective perception among the public. We aimed to identify the perception factors influencing satisfaction with CHC services among older adults or their families, and explore the influence paths, in Banan district of Chongqing, China.

Methods: A sample survey was conducted among 879 households in 32 communities in Banan district in March 2019 to obtain the basic data. The hypothetical service satisfaction model, the degree of the influence each perception factor has on final satisfaction, and influence paths were analysed using the Smart PLS 3.0 software.

Results: A total of 800 households in which the older adults aged 60 years and over were included in the study. Service expectation (-0.191), perceived quality (0.508) and perceived value (0.441) were three direct factors influencing the satisfaction with CHC services. Both perceived quality and public expectation could indirectly affect public satisfaction by way of influencing perceived value (0.224 and -0.087, respectively).

Conclusion: Public expectation, service quality and value recognition are the main factors affecting satisfaction of CHC services. Service quality and accessibility should be improved along with the incrementally construction of rational service expectation towards CHCs. Policy and financial inputs and the introduction of well-trained health providers are of great importance as well. Furthermore, equal access to CHC service should be gradually promoted especially for older adults.

Keywords: Community health center; Perception; Satisfaction; Service utilization

Abbreviations: CHCs: Community Health Centers; AVE: Average Variance Extracted

INTRODUCTION

There are over 184 million individual's ≥ 60 years of ages with at least one chronic disease in China in 2019 according to the National Health Commission. Most of these older patients living with certain underlying health conditions are outpatients, which has imposed a considerable health burden on China's medical system. Since the establishment of hierarchical medical system in 2015 in China, Community Health Centers (CHCs) have served as the primary healthcare facilities for Chinese residents [1]. Due to their function orientation and service content, CHCs have thereafter become the main providers of medical treatment, rehabilitation and health management for older adults in communities or other institutions such as nursing facilities [2]. Although China has made substantial progress in improving primary care through

dynamic policies, gaps still remain in quality of care, efficiency in care delivery and public satisfaction [3]. CHCs are now facing low awareness, low utilization as well as low satisfaction, towards their services among older adults in communities or other institutions in China. Very little attention has been paid to public perception on satisfaction with CHC services in present studies. It is tempting to figure out what perception factors affect the satisfaction with the present CHC services.

A variety of studies have put their efforts on the factors influencing the satisfaction with primary healthcare services among the public and on strategies for improving inadequate utilization. The education background and ability of health practitioners [4-5], patient privacy protection [6], awareness of medical service [7], health outcomes [8], expectation and perception [6,9,10] could affect patient satisfaction with primary healthcare services Uzochukwu et al. reported that in Nigeria higher accessibility of health centres, especially constant drug availability, was the key to raise customer satisfaction, and customers preferred to pay for higher quality primary health services [11]. Intriguingly, Ibeneme et al. has found that in Nigeria mothers' satisfaction could work as a driver of their health-seeking behaviors, and it may receive less influence from mothers' perception of their child's recovery [12]. Different degrees of awareness and perception of primary healthcare services among patients could present distinct patterns of health seeking behaviors [9]. It is suggested that service utilization rate among patients could be improved by introducing services and encouraging engagement [7].

Subjective satisfaction and behavioral perception have been widely applied in the evaluation of primary healthcare services. We did the literature research and review to obtain relevant evidence on client satisfaction associated with perception in terms of primary healthcare services. Based on the previous findings, this paper constructed an evaluation model of satisfaction with CHC services in China from five aspects, public expectation, perceived quality, perceived value, perceived justice and perceived trust. With the satisfaction modelling, we hope to identify the factors influencing satisfaction with CHC services and explore the influence paths in Chongqing, China. Meanwhile, through the path analysis of field data, we want to see real attitudes of older adults and their families towards CHC services in Banan district of Chongqing, China. Taken together, we tried to provide some advices for helping solve the difficulties older adults are facing when requiring health care based on actual utilization of CHC services, in order to strengthen the function and status of China's primary health service system.

METHODOLOGY

Data sources

This study was based on questionnaire data from the Third-party Investigation and Evaluation of Service Quality of Aged Care Institutions in Chongqing and the Third-party Evaluation of Service Quality of Community Aged Care Service Stations in Banan District of Chongqing from January, 2019 to June, 2019. A total of 1438 aged care institutions under Chongqing's jurisdiction were taken into the third-party evaluation on service quality by the Civil Affairs Bureau of Chongqing in 2019. As a third-party evaluation institution, we undertook the quality evaluation of aged care institutions and CHCs in Banan district of Chongqing. This evaluation was mainly based on the survey on service condition,

service supply and patient satisfaction in CHCs. A total of 16 CHCs in Banan district of Chongqing were included into the survey. Older adult's ≥ 60 years of ages themselves or their families were the respondents of the survey. The participants should be full-time residents and could individually response to questions.

This study was approved by the institutional review board at Chongqing Medical University, Chongqing, China. Verbal informed consent was obtained from all the respondents before the start of each interview during this study.

Survey method

After being stratified by age into three groups of roughly equal numbers of samples, namely, 0-30 years old, 30-59 years old, and 60 years old and over, a total of 385 samples were randomly obtained. All samples were obtained by well-trained interviewers through filed investigation in the form of well-modified questionnaire. The interviewers were trained by Chongqing's old-age service institutions, and could accurately identify the respondents and explain the contents of questionnaire. The questionnaire was constituted by three parts, basic information, expectation and choices, satisfaction and recognition, with a total of 13 questions. Basic information included age, gender, education background, household registration, health insurance status and family information. The second part involved degree of awareness to CHC services, degree of satisfaction with CHC services, and utilization status of CHC services. The third part investigated respondents' satisfaction and recognition of CHC services from three aspects, perceived quality, perceived fairness and perceived value.

Data analyses

Smart PLS 3.0 software was used for partial least squares structural equation modeling in this paper, and SPSS version 17 software platform offered statistical analysis. Based on the existing research findings relating to satisfaction and perception of CHC services, hypothesized causal connections between relevant variables were firstly made to establish the satisfaction model. Then Cronbach's α was used to test the internal consistency of these constructs which refers to the reliability of the data, and Average Variance Extracted (AVE) was used to assess convergent validity of the variables related to the proposed constructs. Cronbach α>0.6 and AVE>0.5 were accepted in this research. Furthermore, the maximum likelihood estimation method was chosen for estimating all model path coefficients. An effect was considered significant at P<0.05.

RESULTS

Hypotheses

We did the literature research and review to obtain relevant evidence on public satisfaction associated with perception in terms of primary healthcare services. Variables were mainly summarized from 20 studies [13-31]. Based on the existing research findings, we proposed several hypotheses between six variables including service expectation, perceived quality, perceived value, perceived trust, perceived fairness and public satisfaction, and established the satisfaction model in regards to CHC services as shown in Figure 1 Constructs and the conceptual model based on literature review. The details of hypotheses of the existing relevant researches are available in Supplementary Table 1 Hypotheses and literature sources.
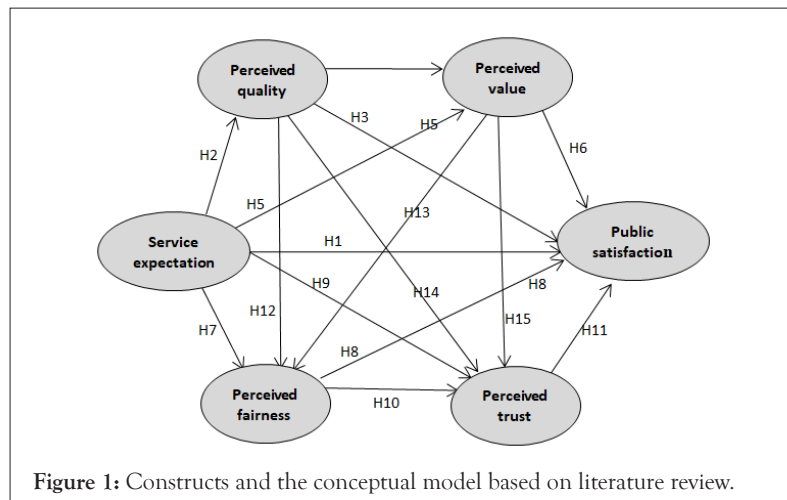
Figure 1: Constructs and the conceptual model based on literature review.

Table 1: Hypotheses and literature sources.

Research Hypothesis	Related Literature
H1: Expectation negatively affects public satisfaction (F→E)	Zeithaml et al. (1993)
	Atika Qazi et al. (2017)
H2: Expectation negatively affects perceived quality (F→A)	Atika Qazi et al. (2017)
H3: Perceived quality positively affects public satisfaction (A→E)	Pablo Gutierrez Rodríguez et al. (2020)
	B R Naveen et al. (2020)
H4: perceived quality positively affects perceived value (A→D)	Bernardo et al. (2011)
H5: Expectation negatively affects perceived value (F→D)	Lin et al. (2012)
	Zhang et al. (2015)
H6: Perceived value positively affects public satisfaction (D→E)	Jesper Bláfoss Ingvardson et al. (2019)
	B R Naveen et al. (2020)
H7: Expectation affects perceived fairness (F→B)	Christoph Emanuel Mueller (2020)
H8: Perceived fairness positively affects public satisfaction (B→E)	Young Namkung et al. (2009)
H9: Expectation affects perceived trust (F→C)	Culnan et al. (2015)
H10: Perceived justice positively affects perceived trust (B→C)	Koufaris et al. (2004)
	Culnan, M. J., and Armstrong, P. K. (2008)
H11: Perceived trust positively affects public satisfaction (C→E)	B R Naveen, Anjula Gurtoo (2020)
H12: Perceived quality positively affects perceived fairness (A→B)	Young Namkung, SooCheong Jan (2009)
	Faruk Anıl Konuk (2019)
	Guan-Yu Lin (2019)
H13: Perceived value positively affects perceived fairness (D→B)	Faruk Anıl Konuk (2019)
H14: Perceived quality positively affects perceived trust (A→C)	Harrison McKnight et al. (2002)
	Davis, R. et al. (2015)
H15: Perceived value positively affects perceived trust (D→C)	Han et al. (2018)

Note: A refers to perceived quality; B refers to perceived fairness; C refers to perceived trust; D refers to perceived value; E refers to public satisfaction; F refers to service expectation.

Reliability and validity tests

Factor analysis was used to test the Composite Reliability (CR), convergent validity and discriminant validity of variables. Cronbach α is a measure used to estimate the reliability of each factor in the model, and CR is a measure used to check the internal consistency between constructs. The alpha value of Cronbach greater than 0.6 is regarded reliable. As shown in Table 1 results of reliability and validity tests, the Cronbach's value (α) for all constructs were in between 0.688 and 0.875, and all the constructs passed the reliability test. The CR scores of all constructs were greater than 0.826, which was higher than the conventional benchmark of 0.70, indicating that the internal consistency of each variable of the model is generally satisfactory. In addition, the loadings

values of all measurement indicators were greater than 0.7, and the AVE values of the six constructs were all above 0.5, indicating that all the indicators satisfied the convergent validity requirement. Good discriminant validity can be reached if the square root of the AVE of a factor is greater than the correlation coefficient of the factor and others. In this study, the square root of the AVE of each construct was greater than the correlation coefficient of other constructs, indicating that each construct has high discriminant validity between each other, and the correlations between constructs are within a controllable range. The details of reliability and validity of the constructs are available in Table 1 Results of reliability and validity tests and Supplementary Table 2 Results of the discriminant validity analysis.

Table 2: Results of reliability and validity tests.

Constructs	Factor loadings	α	CR	AVE	R2	Communality	Redundancy
Satisfaction (E)		0.859	0.934	0.877	0.468	0.484	0.378
E1: Overall satisfaction	0.938						
E2: Existing service score	0.935						
Expectation (F)		0.688	0.859	0.754	-	0.268	-
F1: Urgency of service demand	0.927						
F2: Urgency of government support	0.805						
Quality (A)		0.723	0.826	0.543	0.038	0.258	0.018
A1: Advanced equipment and good medical environment	0.707						
A4: Large number of service items	0.711						
A6: High performance in treatment and good outcomes	0.768						
A7: Enough medical staff and good service attitude	0.76						
Fairness (B)		0.875	0.923	0.8	0.35	0.534	0.259
B1: Patients in the same condition receive same level of service.	0.879						
B2: Equal treatment from medical staff	0.913						
B3: Equal access to services	0.889						
Trust (C)		0.76	0.862	0.676	0.539	0.345	0.34
C1: Community health services can take care of most common diseases.	0.812						
C2: The presence of community health service institutions favors the public.	0.805						
C3: Community health services are trustworthy.	0.849						
Value (D)		0.757	0.846	0.579	0.316	0.306	0.171
D1: Financial input from governments in community health services is worthwhile.	0.742						
D2: Governments' investment of effort in community health services is effective.	0.785						
D4: Reasonable pricing of community health services	0.731						
D5: Expenditure in community health services is cost-effective for individuals.	0.783						

Note: Constructs A2, A3, A5, A8 and D3 were excluded because of low loadings (<0.7) and validity.
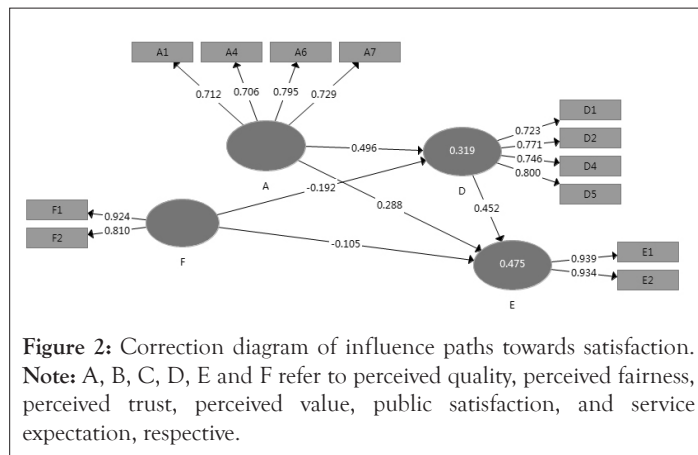
Path analysis

T-test was carried out on the measured results of PLS paths, and the results are shown in Table 2 Path analysis results of included hypotheses. The smaller the P-value, the stronger the evidence that a hypothesis should be rejected. P-values less than 0.05 were used to reject the null hypotheses. According to the results, hypotheses H7 (expectation affects perceived fairness), H8 (perceived fairness positively affects public satisfaction), H9 (expectation affects perceived trust) and H11 (perceived trust positively affects public satisfaction) failed the test, while the other 11 hypotheses passed the test. R-squared is commonly used to measure the goodness of fit of the paths in a model. An R-squared of 10% or even less could have some information but generally indicate low goodness of fit, thus the path is not recommended to take into consideration. As

shown in Table 1 Results of reliability and validity tests, the R2 value of the model related to perceived quality was 0.038, which shows a low goodness of fit. Taken together, 10 hypotheses were finally verified as shown in Table 2 Path analysis results of included hypotheses.

Influence intensity

A revised satisfaction model was obtained after eliminating the untenable hypotheses and irrelevant paths. Then total effect of each prior variable on the satisfaction with CHC services among older adults or their families as well as the indirect effect of each path was calculated. The details of the revised satisfaction model and its influencing paths are shown in Figure 2 Correction diagram of influence paths towards satisfaction.

Figure 2: Correction diagram of influence paths towards satisfaction.
Note: A, B, C, D, E and F refer to perceived quality, perceived fairness, perceived trust, perceived value, public satisfaction, and service expectation, respectively.

There were five paths influencing the final satisfaction of CHC services among older adults or their families. Service expectation, perceived quality and perceived value were the direct influencing factors. The final contributions of service expectation (F), perceived quality (A) and perceived value (D) to public satisfaction (E) were -0.191, 0.508 and 0.441, respectively. Service expectation had a negative impact on public satisfaction, while perceived quality and perceived value presented a positive impact. It could indicate that the higher the expectation for the CHC services, the lower the public satisfaction with. In particular, older adults had higher expectation for both medical care and nursing care in CHCs, and

their satisfactions would go down when the actual condition did not match their expectations. While public satisfaction could be raised when the respondents see higher quality in CHC services and deems the services more valuable than before. The details of the total effect of public satisfaction of CHC services are available in Supplementary Table 3 Total effect of public satisfaction of CHC service.

In addition, there were two indirect influencing paths, and both were based on perceived value. Both perceived quality and public expectation could affect public satisfaction by way of influencing perceived value. The influence coefficients of the two indirect paths (perceived quality → perceived value → public satisfaction, service expectation → perceived value → public satisfaction) were 0.224 and -0.087, respectively. Judgment on the quality of CHC services could affect public satisfaction in a direct manner, and also go first to an intermediate stage, namely, judgment on the value of CHC services, and further affect the final satisfaction. The public believe that the higher the quality of CHC services, the more worthwhile the government's investment and the more cost-effective the service consumption. Thus, higher satisfaction would be definitely achieved at CHC side. This is a positive influence path. In another indirect influencing path, high expectation for CHC services among the public may arouse a bad impression on service value when the public deems the services not cost-effective, which would therefore lower the service satisfaction (Tables 4-6).

Table 3: Results of the discriminant validity analysis.

	Quality	Fairness	Trust	Value	Satisfaction	Expectation
Quality	0.737					
Fairness	0.539	0.894				
Trust	0.575	0.551	0.822			
Value	0.529	0.485	0.649	0.761		
Satisfaction	0.545	0.414	0.514	0.631	0.936	
Expectation	-0.195	-0.205	-0.229	-0.288	-0.29	0.868

Note: The diagonal values in bold are the square root of AVE (Average Variance Extracted) while others are the correlation between the respective constructs.

Table 4: Path analysis results of included hypotheses.

Research hypothesis	Path coefficient	T	P	Verification result
H1: expectation negatively affects public satisfaction F→E.	-0.104	2.568	0.011	Support
H2: expectation negatively affects perceived quality F→A.	-0.195	3.569	0	Suggest giving up
H3: perceived quality positively affects public satisfaction A→E.	0.264	5.651	0	Support
H4: perceived quality positively affects perceived value A→D	0.492	11.76	0	Support
H5: expectation negatively affects perceived value F→D	-0.193	4.067	0	Support
H6: perceived value positively affects public satisfaction D→E.	0.407	7.172	0	Support
H7: expectation affects perceived fairness F→B	-0.051	0.991	0.322	Non-support
H8: perceived fairness positively affects public satisfaction B→E	0.018	0.309	0.757	Non-support
H9: expectation affects perceived trust F→C	-0.009	0.218	0.828	Non-support
H10: perceived justice positively affects perceived trust B→C	0.208	4.192	0	Support
H11: perceived trust positively affects public satisfaction C→E	0.061	1.023	0.307	Non-support
H12: perceived quality positively affects perceived fairness A→B	0.383	7.736	0	Support

		0.272	4.479	0	Support
H13: perceived value positively affects perceived fairness D→B		0.272	4.479	0	Support
H14: perceived quality positively affects perceived trust A→C		0.242	4.144	0	Support
H15: perceived value positively affects perceived trust D→C		0.427	8.801	0	Support

Note: A, B, C, D, E and F refer to perceived quality, perceived fairness, perceived trust, perceived value, public satisfaction, and service expectation, respectively.

Table 5: Total effect of public satisfaction of CHC service.

	Quality	Fairness	Trust	Value	Satisfaction	Expectation
Quality		0.526	0.563	0.493	0.508	
Fairness			0.209			
Trust						
Value		0.285	0.49		0.441	

Table 6: The effect of indirect influencing paths.

Influencing path	Specific indirect effect
Quality → Value → Satisfaction	0.224
Expectation → Value → Satisfaction	-0.087

DISCUSSION

Primary health care is imperative for the establishment of a strong healthcare system that ensures better health outcomes, effectiveness and efficiency, as well as health equity [32]. As the first-contact, continuous, comprehensive, and coordinated care providers, CHCs are increasingly valued in chronic disease management [33-34]. There are a wide range of factors determining the service satisfaction among visitors seeking medical treatment from CHCs. According to literature review, the success of a health facility largely depends on client perception of health care quality due to its impact on client satisfaction based on services provided. Furthermore, satisfaction of clients could also influence utilization of health care facilities in some degree.

This paper, from the perspective of subjective perception, endeavors to identify the factors influencing public satisfaction with CHC services in Banan district of Chongqing, China, and explore the influence paths associated with the satisfaction. Several perception related variables that serve as potential drivers to public satisfaction were chosen out based on literature review. Through influence path analysis, we found that service expectation, service quality and value recognition were the main factors affecting service satisfaction of CHCs. In addition, both perceived quality and service expectation could affect public satisfaction through perception or judgment on value of CHC service.

Service expectation as a direct influence factor

The influence coefficient of service expectation was -0.191. Service expectation has a negative impact on the satisfaction with CHC services. It is necessary to adjust the public expectation, or even reduce it to achieve increase in service satisfaction. Excessive public expectation in certain time has no positive significance to the evaluation of satisfaction. CHCs should show their actual present condition without exaggeration to the public. CHCs and relevant government agencies should inform the public by providing

real information and policies to the public through face-to-face communication or social media. It is necessary to promote public participation and guide the public to have rational expectations on present services CHCs can provide at its healthcare level. As service receivers, the public tend to exaggerates their needs and raise their expectations. Once their roles turn to service providers and regulators, the public would have more rational considerations in not just service satisfaction. Rational expectation for healthcare services based on the function positioning and value orientation of CHCs among the public may present a positive impact on service satisfaction.

Perceived value as a direct influence factor

The influence coefficient of perceived value of CHC service was 0.441. Perceived value has a direct, positive impact on the satisfaction with CHC services. In addition, the influence coefficients of the two indirect paths were 0.224 and -0.087, respectively. We can conclude that value recognition of CHC services is an important driver to public satisfaction. Both perceived quality of care and service expectation could affect public value recognition and further the public satisfaction with CHC services. Thus, the present situation of CHCs starves for dynamic health publicity to cultivate existing sources and foster appropriate incentives to enhance value recognition. Various means of publicity should be leveraged to ensure that the public stays informed with healthcare knowledge and government's policies provided by CHCs and its staffs. For example, mass media can serve as a forum for health education among young generations, while on-the-spot or face-to-face demonstration or interpretation would be efficient among older adults. Health education should concentrate on imparting health-related knowledge and attitudes, and focus on function positioning and value orientation of CHCs. In addition, incorrect and improper knowledge should be prevented or reduced at primary healthcare level when carrying out health education activities, which could in some degree dispel mistrust and disrespectfulness

towards CHCs. Furthermore, CHCs should show their crucial and irreplaceable role in protecting public health and addressing health crisis. Undoubtedly, for instance, Chinese health care system including CHCs has done a great job in quelling COVID-19 pandemic and further defending in China. Taken together, public value recognition could be reached and enhanced among different communities from many aspects.

Perceived quality as a direct influence factor

We found through path analysis that perceived quality of CHC services could directly (influence coefficient: 0.508) or indirectly (through influence on perceived value of CHC services) affect public satisfaction towards CHC services. Policy and financial inputs, and the introduction of well-trained health provider's especially general practitioners are of great importance. Governments and relevant authorities have to lean forward and fast-track resources to primary health care, for example, in terms of training of medical staff, medical equipment and instruments and financial protection. In some degree, improvement on the quality of CHC services can serve as a means to help gain value recognition, which is consistent with the indirect influence path (perceived quality → perceived value → public satisfaction) we found in the study. Thus, for instance, professional performance in the basic medical service and accessibility,8 and job satisfaction of primary care providers[35-36] can affect the public value recognition towards CHCs. In terms of site location, we should take into account the distribution density of CHCs, floor space, and accessibility (topography, transportation, etc.). CHCs should be allowed to provide paid services within their capabilities. Service items can be adjusted or established according to public needs to increase the income of CHCs. It is necessary to form a virtuous cycle between government funding, service providing and social evaluation, which could further restore the status of or reinforce the role of a CHC.

Lack of fairness and trust towards CHC service

Path analysis has shown that there are direct connections between perceived fairness, perceived trust, perceived quality, and perceived value. This indicates that perceived quality and perceived value of CHC services could further affect public evaluation or judgment on fairness and trust in CHCs and the stuff. But perceived fairness and trust have neither direct influence on final satisfaction nor indirect with the help of other variables. These suggest that lack of trust and fairness in CHC services does exist among older adults or their families in Banan district of Chongqing, China. Low awareness to CHC services, low utilization of CHC services, and low appraisals from the public could contribute to the lack. There is still a great disparity between urban and rural CHCs as well as between areas in service quality and care efficiency [37-38]. In regards to the existing lack of trust and fairness, CHCs should first and foremost ensure the availability of basic health services including children's health care and chronic disease management, and increase awareness to and utilization of CHC services especially among older adults. In addition, we can take health equity as the breakthrough point. CHCs should narrow the gaps in basic health service items and service quality between areas, and adhere to principle of equal treatment, so as to enhance positive public perception to fairness and trust.

CONCLUSION

This paper provides an overall outline of perception factors influencing service satisfaction of CHCs as the typical primary care facilities using survey data from Banan district of Chongqing, China. Survey respondents focused on older adults who are the main visitors in CHCs, and other social individuals living with older adults. Five influence paths have been obtained in this study. We found that service expectation, perceived quality and perceived value were the main factors directly affecting public satisfaction towards CHC service. Among indirect paths, both perceived quality and service expectation could affect public satisfaction by way of influencing perceived value of CHC services. So subjective perception on the satisfaction with CHC services could be largely affected by expected outcomes, quality of health care and value of service at least among the public in Chongqing. Therefore, in order to improve service satisfaction in CHCs among older adults and their families, we need to increase public awareness to CHC services, and promote the publicity of function positioning and value orientation of CHCs, and thus incrementally facilitate the construction of rational service expectation among healthcare receivers. Most importantly, much more efforts should be paid to quality of healthcare services of CHCs. In addition, there is a lack of fairness and trust in CHCs among the public. Subjective perception of quality and value of CHC services could affect that of fairness and trust in CHCs. Positive public perception of fairness and trust could in turn help improve service satisfaction. Besides, various aspects such as accessibility, policy and financial inputs, introduction and training of health providers should be taken into consideration for the further development of CHCs.

LIMITATIONS IN FUTURE RESEARCH

This study is based on the field survey in Banan district of Chongqing, China, so the conclusion can only summarize the characteristics of public perception of primary healthcare services in Banan district. Likewise, older adults or their families are the respondents in the survey, and their attitude or subjective judgement towards health services of CHCs cannot represent the opinions of all social individuals.

The research used the public satisfaction model, and was based on the subjective perception of health services of CHCs. Personal subjective perception relies on personal assumptions, beliefs or opinions, and is easily influenced by the surrounding environment, thus personal subjective feelings and expressions would be dynamic at different times. Besides, an expressed opinion may not reflect the true feelings of a patient.

Based on the above two limitations, we should in future research further expand the scope of investigation and increase sample size. In addition, great importance should be paid to accuracy of survey data. Moreover, we should follow up the same survey samples to study the influence of changes in social environment on public subjective feelings, such as the change of public perception towards CHC services after COVID-19 pandemic.

DECLARATION

Supplementary Information

The supplementary material available at online.

Acknowledgements

Author contributions

All authors have read and approved the manuscript. JL, CL and ZHS made substantial contributions to conception and design of the study. JL and CL involved in drafting the manuscript or revising it critically for important intellectual content. CHW TTW and JL involved in the survey and data analysis.

Availability of data and materials

The datasets supporting the conclusions of this article are available from the corresponding author on reasonable request.And the supplementary material online includes the data.

Competing interest

The authors declare that they have no conflict of interest.

Statement of human and animal rights

This study does not contain any studies with animals performed by any of the authors.

Ethics approval and consent to participate

Study (including the data collection of older adults or their families' questionnaire) is received approval by the medical ethics committee of the Chongqing Hospital of Traditional Chinese Medicine and the community of Banan district. And there are no respondents are under 18 years old.

Informed consent

For this type of study informed consent is not required

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