

Research Article

The Relationship between Family Doctor Contract Services Policy and Perceived Participation in Primary Health Care among Chronic Disease Patients in China: The Mediating Role of the Patient Trust

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Participation by patients with chronic diseases under primary health care requires more attention to achieve effective disease management and better health outcomes. In 2016, China proposed accelerating the establishment of a system of family doctors (FDs) and strengthening doctor-patient communication to better meet residents' health service needs. This study aimed to describe perceived participation in primary health care among patients with chronic diseases in northeastern China and explore the impact of FD contract services and patient's trust on patients' perceived participation. A cross-sectional survey of 847 patients with chronic diseases in 16 primary healthcare institutions was conducted in Jilin Province, China. Among all participants, 453 patients reported signing up for FD contract services (62.93%). The perceived participation of patients with chronic diseases was at a low level (mean = 6.71 and SD = 3.35). After controlling for sociodemographic variables and health-related variables, FD contract services directly and indirectly influenced patients' perceived participation. The patient's trust was a mediator in the relationship between FD contract services and perceived participation. This study confirmed the valuation of family doctor contract services and provided a theoretical basis for the formulation of primary health service policies. Health organizations should continue to enhance the capacity of primary health services and attract more chronic disease patients to contract with FD teams, thereby enhancing doctor-patient trust and increasing patient's participation in primary health care.

1. Introduction

Chronic disease has become the leading cause of death worldwide [1]. The number of people with chronic diseases in China is increasing and trending upward year by year [2]. It is imperative that policymakers explore how to develop appropriate treatment plans to achieve effective management of chronic diseases. Given the persistence, complexity, and diversity of chronic disease patient needs [3], encouraging patient's participation in care and enabling health care professionals to understand each patient's needs and develop reasonable alternatives to meet these needs are particularly valuable aspects [4].

Patient's participation is a multidimensional concept that does not have a single accepted definition [5–7]. After considering the patient's perspective, the patient's participation was described as a broad concept that includes participation in shared decision-making processes, sharing information and knowledge, and participation in planning and managing self-care [7–9]. Patient's participation often occurs during interactions with medical staff in which patients can participate through diverse activities, such as asking questions, expressing decision-making preferences and opinions, and providing information [10, 11]. When their views, needs, and preferences are taken into account, patients feel respected, which increases patient's satisfaction

[12]. In addition, patient's participation can lead to more positive outcomes. At the individual level, patient's participation contributes to improved treatment adherence [12], better care experiences and health outcomes [13], and positive impacts on patient's safety [14]. At the health system level, patient's participation has the potential to reduce health care costs and medical errors [15, 16].

Considering the important role of patient's participation, an increasing number of people prefer patients to be active participants rather than just passive recipients of care [17]. Healthcare services have long been considered a co-production process where patients are seen as experts who know their bodies, symptoms, and conditions, and their experiential knowledge is considered to complement their expertise [18]. Therefore, patients should participate as partners with professional providers in the collaborative production of health care [19]. However, not all patients desire or are prepared to actively participate in the treatment decision-making process [20, 21]. Medical staff attitudes and the healthcare environment are both elements that influence patients' participation intention [22]. Moreover, a patient's illness severity, symptoms, and treatment plan are associated with patient's participation strategies [18, 23]. For patients with chronic conditions, as the disease progresses, patients often have complex medical needs that require them to more frequently and proactively interact with their healthcare providers rather than just be consulted or receive information [24–26]. In addition, patients need to participate in the broader healthcare delivery process, including disease screening, treatment selection, routine disease management, complication prevention, and rehabilitation [10, 26, 27]. Therefore, active collaboration between health professionals and patients should be further encouraged to achieve the effective management of chronic diseases.

Primary care is the setting in which a high proportion of patients with chronic diseases is managed [28]. A strong primary health care is associated with improved health outcomes for people with chronic diseases and has become an important approach to address the burden of chronic noncommunicable diseases [29, 30]. Since the prevention and control of chronic diseases are related not only to health services but also to individual behaviors and lifestyles combined with environmental and socioeconomic risk factors [31], a holistic, system-wide approach to chronic disease prevention and control is needed. Primary health care can provide a longitudinal and more comprehensive patient-centered care pattern than clinical care [30]. In this pattern, patients play a central role in managing their disease, and their views and opinions in discussions regarding the treatment can help the physician team adjust treatment plans to the patient's needs [32]. Previous study has found that patients who actively communicate with their physicians receive more patient-centered and more informative care [10]. However, in China, a large number of patients refrain from utilizing primary health care services because of the nonmandatory first visit and poor service capacity of primary health care facilities [33, 34]. In addition, due to the older age and lower education level of chronic disease patients receiving primary care, their participation in health

management is low or even passive [35]. More research is required to better understand the barriers and facilitators to the participation of patients with chronic diseases in the primary healthcare context.

China's primary healthcare system provides basic clinical care and public health services to one-fifth of the world's population and plays an important role in addressing the growing burden of chronic diseases, especially for vulnerable populations [36]. Considering a core component of primary health care in China, the family doctor (FD) contract services policy was launched in China in 2009 and has been officially implemented nationwide since 2016 [37]. FD contract services are provided by a general physician team usually consisting of a general practitioner, a nurse, and a public health doctor. Under the FD contract service model, residents can voluntarily sign a contract with a chosen general physician team [38]. As the priority population for FD contract services, patients with chronic diseases including hypertension and diabetes not only receive basic services such as free disease screening, health record establishment, and regular follow-up visits but also receive personalized services including chronic disease management groups and family bed services [39, 40]. These services help improve patient health awareness and treatment compliance for effective chronic disease control [41]. A meta-analysis that integrated results from 21 studies conducted in China between 2013 and 2019 showed that the implementation of FD contract services increased chronic disease control rates by 18% [42]. Under this service model, the connection and communication between the physician team and the patient is gradually strengthened, helping to transform the primary care facility-based service relationship into a real patient-centered service model [43]. FD contract service model has been demonstrated to be associated with higher levels of patient perceived participation in care [44], and a study conducted in China found that implementing the FD contract service policy improved patients' perceived participation [45]. After the FD contract service policy was implemented, the doctor-patient communication improved, and personalized health management plans were developed based on patients' actual needs for health services, which increased patient's participation in primary healthcare [46]. In addition, FD teams can improve patients' health knowledge and offer emotional support during their service delivery [45, 47], which improves the conditions for patient's participation. Therefore, it is hypothesized that (H1) FD contracts can positively influence patients' perceived participation.

After a contract is signed, FD contract services connect patients and doctors and play a vital and positive role in building doctor-patient trust [48]. Trust is considered the cornerstone of the doctor-patient relationship [49]. McAllister suggested that there are two main forms of interpersonal trust, namely cognitive trust and emotional trust [50]. FD contract services can improve patients' perceptions of the professional quality and responsibility of FDs, which leads to the formation of cognitive-based trust; moreover, patients may establish emotional connections in the process of receiving FD contract services, which leads to the

formation of emotional-based trust and increases patients' feelings of security [51, 52]. This means that implementing an FD contract service policy can help establish patients' trust in their physicians as they receive continuous primary healthcare services [53]. Neufeld et al. argued that it is essential to provide practical and emotional support to patients who wish to participate in medical decision-making [54]. Patient's participation requires that patients be respected and provided with information in their encounters with health professionals (i.e., that physicians listen to and value what patients know about their bodies and conditions); otherwise, this situation may not be conducive to patient's participation in care [55]. The doctor-patient trust is characterized by co-operation and respect, which facilitate a situation in which the doctor and patient face the patient's illness together based on emotional connection and information sharing [56, 57]. Once the trust is built, patients may consider their physicians to be reliable, competent, and able to provide valuable assistance, which may make them more willing to interact with their physicians, thereby increasing patient's participation [58]. Numerous studies have shown that patients' trust in physicians is a vital contributor to their participation in the treatment decision-making process and self-health management behaviors [59–61]. Montori et al. found that patients with chronic conditions developed an ongoing partnership with their physician team while receiving long-term care services [62], which fostered trust and created an environment that was suitable for patient's participation. Based on the above literature review and analysis, we hypothesize that (H2) patient trust mediates the pathway between FD contract services and patients' perceived participation.

Given the critical role of patient's participation in the management of patients with chronic diseases, the purpose of this study was to investigate (1) the current status of the perceived participation of patients with chronic diseases in Chinese primary health care settings; (2) the effect of FD contract services on patients' perceived participation; and (3) the mediating role of patient trust variables in the relationship between FD contract services and patients' perceived participation. This study provides approaches to increase the participation of patients with chronic diseases in primary health care and offers evidence to support policy improvements for FD contract services.

2. Materials and Methods

2.1. Study Design and Participants. A cross-sectional study was conducted through a face-to-face survey from August to October 2019 in Jilin Province, China. A multistage stratified sampling was adopted for this study. In the first stage, four cities in Jilin Province were selected based on their geographical location and economic development. In the second stage, two districts or counties were randomly selected in each city. In the third stage, we stratified urban and rural areas within each district or county so that one community health center and one township health center were selected in each district or county. We used the purposive sampling method to select primary health care facilities with more

than 100 daily visits as the study sites. All of these facilities were identified as model facilities by the Chinese state/local governments, which means that these facilities are able to provide better and broader health services [63]. Altogether, 16 primary health care facilities were investigated in this study.

In each selected facility, we adopted the convenience sampling method to select patients. The inclusion criteria for the study were as follows: (1) ≥ 18 years old; (2) had received health care services (including outpatient or inpatient services) at the surveyed institution; and (3) were mentally competent and able to give informed consent. We recruited 6 graduate students who were trained in survey skills as investigators to ensure the integrity and consistency of the survey. The participants were interviewed in offices at the surveyed institutions, and an investigator surveyed each patient individually. All data were stored and processed anonymously. After reading the informed consent form or listening to the investigator's explanation, the participant provided their informed consent by indicating their willingness to continue to be interviewed. Then, the questionnaires were completed based on the responses, and a small gift was given as a token of appreciation for participation. The participants' information was completely confidential and recorded anonymously. This study was approved by the Ethical Committee of Jilin University School of Public Health. After excluding 43 questionnaires due to interrupted responses, 1334 questionnaires were collected, and the effective response rate was 96.88%. We screened 847 valid questionnaires based on the question regarding whether the respondent suffered from a chronic disease, accounting for 63.49% of the total sample. In this study, 24 items (1 FD contract service item, 13 perceived participation items, and 10 patient trust items) were included. Benter and Chou indicated that the sample size should be 10 times the number of variables in the analysis [64]. Thus, the sample size in this study was considered sufficient to provide good statistical power.

2.2. Research Variables

2.2.1. The Dependent Variable

(1) Patient's Participation in Care. Patient's participation in care was measured by the 13-item perceived involvement in care scale (PICS), in which patients are asked to respond based on their general feelings and participation behaviors during interactions with physicians in the surveyed institution [65]. The 13 items were divided into three dimensions that conveyed different aspects of patient participation: physician facilitation of the patient's participation, patient's information provision, and patient's participation in decision-making. All responses were divided into "yes" and "no" options, with yes = 1 and no = 0. The total score was obtained by adding the scores of all questions, with higher scores indicating greater patient's participation during medical consultations. In our study, Cronbach's alpha coefficient of the scales and subscales ranged from 0.716 to 0.827.

2.2.2. The Independent Variable

(1) *FD Contract Service.* FD contract service was measured by the question “Did you sign up for the contract service with a family doctor team?” with response options of no = 0 and yes = 1.

2.2.3. The Mediating Variable

(1) *Patient’s Trust.* Patient’s trust was measured by the Wake Forest Physician Trust Scale (WFPTS), which assesses various aspects of patients’ trust in their primary healthcare physicians [66]. The current study used the Chinese version of the WFPTS, which was modified to fit the characteristics of the Chinese healthcare system [67]. The Chinese WFPTS has 10 items and consists of two dimensions, benevolence (e.g., “your doctor is extremely thorough and careful”) and technical competence (e.g., “you completely trust your doctor’s decisions about which medical treatments are best for you”). Each item is rated on a 5-point Likert scale from “strongly disagree” to “strongly agree,” with scores ranging from 1 to 5. After reverse coding the negative items (items 2, 3, and 7), the final score was calculated by averaging the scores of all 10 items, with higher scores indicating greater patient’s trust. In the present study, Cronbach’s alpha coefficient of the scales and subscales ranged from 0.870 to 0.872.

2.2.4. *Control Variables.* The effects of sociodemographic variables were controlled, including gender (0 = male; 1 = female; with the male group as the reference), age (1 = 60 years old and below; 2 = 61–70 years old; 3 = over 70 years old), marital status (0 = unmarried; 1 = married; with the unmarried group as the reference), employment status (0 = unemployed/retired; 1 = employed, with the unemployed/retired group as the reference), and education level (1 = primary school and below; 2 = junior high school; 3 = high school and above).

Health-related factors may be important determinants of patient’s participation. Patients with different disease severities have different participation needs [18]. Accordingly, this study also controlled the effects of health-related variables (including the number of chronic diseases and the number of annual primary care visits per patient). The number of chronic diseases was calculated by the surveyors sequentially asking patients whether they had any medically diagnosed common chronic diseases (including hypertension, heart disease, diabetes, stroke, dyslipidemia, cataracts, arthritis/rheumatism, tumors, chronic lung disease, asthma, and mental illness) or other chronic diseases. In our study, we divided the answers into three options (1 = one chronic disease; 2 = two chronic diseases; 3 = three or more chronic diseases). The number of annual primary care visits per patient was measured by the question “In the past year, how many times did you visit this institution in total?”. The answer was divided into two options (0 = three or less; 1 = four or more, with the three or less group as the reference).

2.3. *Statistical Analyses.* The collected data were analyzed by IBM SPSS Statistics 24.0 and PROCESS Macro 3.5. The participants’ characteristics and study variables are described using means with standard deviations and frequencies with percentages. An independent sample *t*-test was used to compare the research variables for gender, marital status, employment status, the number of annual primary care visits per patient, and FD contract service. Differences in age, education level, and the number of chronic diseases were tested by conducting one-way analysis of variance (ANOVA). The Pearson correlation test was used to analyze the correlations among FD contract service, patient trust, and patient’s participation in care. We followed MacKinnon’s four-step procedure to establish a mediating effect [68], which requires (a) a significant relationship between the independent variable and the dependent variable, (b) a significant relationship between the independent variables and the mediator variables, (c) a significant relationship between the mediator variable and the dependent variable when the independent variable is controlled, and (d) a significant coefficient for the indirect path between the independent variable and the dependent variable through the mediator variable. All regression analyses used sociodemographic variables and health-related variables as control variables. The mediation analysis was conducted using the PROCESS macro (Model 4) [69]. The bootstrap estimation procedure was used to test the mediating effect. For all analyses in our study, $p < 0.05$ was considered statistically significant.

3. Results

3.1. *Sample Characteristics.* Among the 847 patients with chronic diseases who consulted primary health care institutions, more than half were female (69.89%, $n = 592$). Their ages ranged from 22 to 88 years (mean 61.55). Of the interviewees, 453 patients reported signing up for FD contract services (62.93%). The mean score for the patient’s trust was 3.39 (SD = 0.36), and the mean score for patients’ perceived participation in care was 6.71 (SD = 3.35). The results of the univariate analysis showed that gender, number of chronic diseases, number of annual primary care visits per patient, and FD contract service influenced patients’ perceived participation ($p < 0.05$). Details are shown in Table 1. The participants had an average of 2.03 chronic conditions (ranging from 1 to 6). The most common types of chronic diseases were hypertension (60.45%), heart disease (51.83%), diabetes (24.86%), and arthritis/rheumatism (20.07%).

3.2. *Correlations among FD Contract Service, Patient’s Trust, and Patient’s Perceived Participation.* The Pearson correlation was used to analyze the correlation among FD contract service, patient’s trust, and patient’s perceived participation in care. The results showed that all the correlations among these variables were statistically significant, with coefficients ranging between 0.119 and 0.537 ($p < 0.01$). Details are shown in Table 2.

TABLE 1: Patient's trust and patient's perceived participation in primary care by sociodemographic and disease characteristics ($N=847$).

Variables	Group	n (%)	Patient's trust		Patient's perceived participation	
			$M \pm SD$	t/F	$M \pm SD$	t/F
Total		847 (100)	3.39 \pm 0.36		6.71 \pm 3.35	
Gender	Male	255 (30.11)	3.39 \pm 0.34	0.964	6.19 \pm 3.30	-2.947**
	Female	592 (69.89)	3.39 \pm 0.37		6.93 \pm 3.35	
Age (year)	≤ 60	326 (38.49)	3.34 \pm 0.40		6.56 \pm 3.39	
	61-70	368 (43.45)	3.42 \pm 0.35 ^a	4.927**	6.94 \pm 3.37	1.611
	>70	153 (18.06)	3.41 \pm 0.32		6.46 \pm 3.21	
Marital status	Married	673 (79.46)	3.39 \pm 0.37	0.596	6.75 \pm 3.38	0.727
	Unmarried (single/divorced/windowed)	174 (20.54)	3.38 \pm 0.33		6.55 \pm 3.26	
Employment status	Employed	283 (33.41)	3.39 \pm 0.38	0.710	6.72 \pm 3.54	0.062
	Unemployed/retired	564 (66.59)	3.38 \pm 0.35		6.70 \pm 3.25	
Education level	Primary school and below	343 (40.50)	3.40 \pm 0.31		6.71 \pm 3.20	
	Junior high school	258 (30.46)	3.38 \pm 0.39	0.454	6.64 \pm 3.30	0.138
	High school and above	246 (29.04)	3.37 \pm 0.39		6.79 \pm 3.61	
Number of chronic diseases	1	327 (38.61)	3.37 \pm 0.35		6.58 \pm 3.35	
	2	266 (31.40)	3.35 \pm 0.38	4.509*	6.45 \pm 3.29	3.226*
	≥ 3	254 (29.99)	3.44 \pm 0.35		7.15 \pm 3.39	
Number of annual primary care visits per patient	≤ 3	464 (54.78)	3.36 \pm 0.36	4.822*	6.34 \pm 3.34	12.846***
	≥ 4	383 (45.22)	3.42 \pm 0.36		7.16 \pm 3.32	
Contract service with FD	Signed	533 (62.93)	3.43 \pm 0.36	4.948**	7.20 \pm 3.29	5.644**
	Not signed	314 (37.07)	3.31 \pm 0.35		5.88 \pm 3.30	

P values were calculated by independent samples t tests (pairwise comparisons) and one-way analysis of variance (ANOVA; three or more groups). FD, family doctor. * $p < 0.05$. ** $p < 0.05$.

TABLE 2: Correlation analysis among FD contract service, patient's trust, and patient's perceived participation in primary care (r).

	FD contract service	Patient's trust	Patient's perception participation
FD contract service	1		
Patient's trust	0.168**	1	
Patient's perceived participation	0.119**	0.537**	1

FD, family doctor. ** $p < 0.01$.

3.3. *The Mediating Effect of Patient's Trust between FD Contract Service and Patient's Perceived Participation.* Table 3 and Figure 1 show the multiple linear regression results for the pathway from FD contract service to patients' perceived participation through patient's trust after

controlling sociodemographic variables and health-related variables. In Model 1, the effect of FD contract service on patients' perceived participation was significant ($B = 1.270$, $p < 0.001$); therefore, hypothesis 1 was supported. In Model 2, the effect of FD contract service on the patient's trust was

TABLE 3: Regression analysis of the mediating effect of patient's trust on the relationship between FD contract service and patient's perceived participation.

Variables	Model I (patient's perceived participation)			Model II (patient's trust)			Model III (patient's perceived participation)		
	B	β	t	B	β	t	B	β	t
Control variables									
Gender	0.785	0.107	3.094**	0.003	0.004	0.115	0.770	0.105	3.507***
Age	-0.010	-0.002	-0.060	0.036	0.073	2.002*	-0.177	-0.038	-1.224
Marital status	0.284	0.034	0.988	0.029	0.032	0.915	0.152	0.018	0.611
Employment status	0.095	0.013	0.368	0.023	0.031	0.832	-0.013	-0.002	-0.057
Education level	0.096	0.024	0.662	-0.011	-0.025	-0.685	0.145	0.036	1.161
Number of chronic diseases	0.112	0.028	0.797	0.020	0.045	1.304	0.020	0.005	0.166
Number of annual primary care visits per patient	0.686	0.102	3.015**	0.042	0.058	1.693	0.493	0.073	2.498*
Independent variable									
FD contract service	1.270	0.183	5.386***	0.112	0.150	4.376***	0.753	0.109	3.647***
Mediating variable									
Patient's trust	0.061				0.041		4.615	0.496	16.744***
R ²	0.052				0.032			0.297	
Adjust-R ²								0.289	
F	6.817****				4.469***			39.231****	

FD, family doctor; B, unstandardized coefficients; β , standardized coefficients. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$.

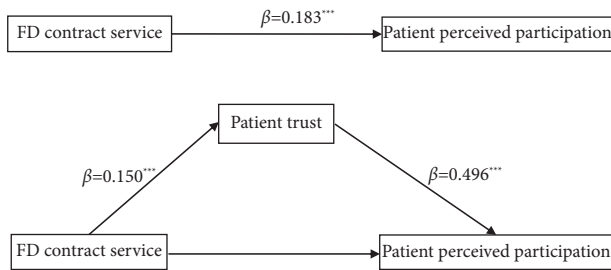


FIGURE 1: Patient's trust as a mediator between FD contract service and patient's perceived participation in primary care *** $p < 0.001$.

significant ($B = 0.112$, $p < 0.001$). In Model 3, after controlling FD contract service, patient's trust was significantly associated with patients' perceived participation ($B = 4.615$, $p < 0.001$). Using the bias-corrected percentile bootstrap method from 5000 bootstrap replications, the mediating effect of patient's trust in the relationship between FD contract service and perceived participation was verified ($ab = 0.517$, $SE = 0.123$, $95\% \text{ CI} = [0.280, 0.765]$), and hypothesis 2 was supported. The results are presented in Table 4. The mediation effect accounted for 40.71% of the total effect.

4. Discussion

This study investigated the perceived participation of patients with chronic diseases who consulted with primary healthcare institutions and explored the impact of FD contract service and patient's trust on patients' perceived participation through a cross-sectional survey of 847 patients with chronic diseases from 16 primary healthcare institutions in northeastern China was conducted. The results show that FD contract service and patient's trust were associated with patient's participation in primary healthcare and that FD contract service positively predicted patient's participation in primary healthcare and partially affected patient's participation through the patient's trust. To our knowledge, this study may be the first to explore the mediating effect of the patient's trust between FD contract services and perceived participation in primary health care services by patients with chronic diseases in China. Our findings can help policy researchers and decision-makers better understand the driving factors of patient's participation in primary health care so that they can develop effective strategies to improve participation among patients with chronic diseases and contribute to the achievement of patient-centered medical services.

Our study results showed that the perceived participation score among patients with chronic diseases was 6.71 ± 3.35 (total score of 13), with a lower score level overall. Another study conducted in China also found that patients in community general practice clinics were less willing to actively participate in medical decision-making [70]. This may be because the paternalistic approach to interactions is still dominant in Chinese healthcare settings [71]. Moreover, the lack of equipment and personnel in primary health care institutions compared to secondary

or tertiary hospitals leads to poorer service quality [72], which may also hinder patient's participation in primary care. On the other hand, the majority of patients attending Chinese primary health care institutions is elderly [73]. Due to the decreased comprehension and memory, they are often unable to express their wishes accurately when communicating with their physicians, which may also be one explanation for the low patient participation. Therefore, in addition to improve the service capability, health care providers should create a health care environment in which patients can freely express their concerns, promoting respect, and equality to support and guide patient's participation [74]. Patient's participation can be enhanced in Chinese primary care institutions through prolonged consultation times, maintaining continuity of consultation, and good consultation climate [70, 75], thus enabling patients to play an active role in the health care system.

Many studies have shown that the FD contract service policy plays an important role in the health care delivery system and can improve primary health care quality and patient satisfaction [43, 76]. As hypothesized, our study showed that patients who benefited from the policy were also more likely to report higher perceived participation, that is, contracted patients were more engaged in shared decision-making, information sharing, and planning and managing self-care. This is consistent with other research that showed that FD contract services ensure that patients with non-communicable diseases exhibit self-management behaviors [77]. Contracting with FDs can improve the disease awareness and treatment compliance of patients with chronic diseases such as hypertension and has a positive impact on patients' physical and mental health [78, 79]. Previous studies in China found that the service quality of family doctors still falls short of patients' expectations [80, 81] and that a large number of contracted patients have low awareness and do not utilize FD contract services [82]. Our results confirm the important role of the FD contract service policy in chronic disease management, complement the literature that evaluates the effectiveness of this policy, and provide evidence to support policy improvements for FD contract services. Primary healthcare institutions should comprehensively strengthen the construction of FD teams based on talent, improve service quality and medical technology, and enhance patients' sense of identity and belonging [83]. In addition, public health services, such as health management and health education provided by family doctors, should be improved to enhance patients' health literacy, thus creating conditions for patients to participate in primary healthcare [23].

In this study, we identified FD contract service as an independent predictor of patients' trust in their doctors after controlling for other factors, consistent with a previous study [48]. A previous comparative study found that the majority of patient experiences improved after the implementation of the FD contract services policy, and patient interaction, communication, and trust were all enhanced [45]. For a long time, Chinese residents, especially those with poor health, have had very little trust in

TABLE 4: Bootstrap analysis of the significance of the mediation effect.

Path	Effect	SE	BC 95% CI
Direct effect: FD contract service → patient's perceived participation	0.753	0.206	(0.348, 1.158)
Indirect effect: FD contract service → patient's trust → patient's perceived participation	0.517	0.123	(0.280, 0.765)
Total effect: FD contract service → patient's perceived participation	1.270	0.236	(0.807, 1.732)

Abbreviations: FD, family doctor; SE, standard error.

the competence of primary healthcare institutions compared to tertiary hospitals [84]. Thus, patients seek health care resources directly from hospitals once they become sick [85]. This may be due to the gap between the service capacity of primary healthcare institutions in China and patients' diagnostic and treatment needs, which prevents patients from utilizing primary health services and forming trusting doctor-patient relationships [86]. However, our study found that the implementation of the FD contract service policy may be a facilitator of the patient's trust. On the one hand, during the implementation of FD contract services, FDs form acquaintance relationships through frequent interactions with community residents, which improves patients' emotional trust [53]. In addition to the provision of contracted services, primary healthcare institutions have routinized professional and technical training, improving the service capacity of medical staff, and increasing patients' technical trust [87]. Therefore, patients' awareness and willingness to participate in FD contract services should be encouraged, thus increasing patients' trust. FD contract services should continue to be improved to meet the health needs of local people and guide more residents to seek medical care at primary health care institutions.

The bootstrap test showed that patient's trust plays a mediating role between FD contract service and patients' perceived participation, and the results verified our study hypotheses. This means that patients who sign up for FD contract services have more trust in the medical staff and thus their perceived participation in primary health care is improved. Similar to our results, many studies have found that patients' trust in their physicians increases their participation in care [59, 88]. A possible explanation for the findings may be that if patients trust that their doctor will listen to them, answer their questions honestly, and respect their views, they are more likely to actively participate in discussions about the treatment than patients who do not trust their doctor [89]. Patients who trust their physicians have higher confidence and willingness to share disease-related symptoms, which helps physicians develop individualized treatment plans tailored to the patient's condition and needs [49, 90]. Our study further confirms the importance of the patient's trust in increasing patient's participation in healthcare, so healthcare administrators should explore approaches to improve the patient's trust. Specifically, policies should focus on improving physicians' medical techniques and service attitudes, fostering responsibility for patients, and encouraging greater trust and respect for patient-provider relationships to ensure patient's participation in primary care [49, 91].

4.1. Limitations. This study has several limitations. First, our study was conducted in only one province due to resource constraint. This may limit the extrapolation of the study results, although Jilin Province has a population of approximately 24 million, larger than those in many European countries [92]. Second, contracting status and disease information were based on patients' subjective memory rather than historical data from the medical information system, which may cause some bias. Third, there are many other variables related to our outcome variables that we did not account for, such as the type of chronic disease, the severity, and complexity of patient's conditions. Finally, this was a cross-sectional study, so the interpretation of causal inferences from the results is limited. Thus, behavioral patterns of patient's participation in patients with different kinds of diseases can be considered in future work. Longitudinal study designs, qualitative study designs, and possibly even experimental interventions could be used to test and extend this study.

5. Conclusions

This study found that the implementation of FD contract services may be a facilitator of patient's participation. In addition, patient's trust plays a mediating role between FD contract services and patients' perceived participation. The above findings suggest that healthcare providers should guide patients with chronic diseases to contract with FD teams and that patient-doctor communication should be enhanced to better cultivate patient's trust. Such strategies will facilitate increased patient's participation and transform the original primary care facility-based service relationship into a truly patient-centered service model, thereby promoting positive patient health outcomes.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Xinru Li and Jinghua Li conceptualised and designed this paper. Xinru Li, Weiya Shao, Jingyu Ma, and Li Zhang collected data. Angdi Zhou and Yiwen Song contributed to the analysis and advised on the drafts of the manuscript. All authors read and approved the final manuscript.

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