Relationship between subjective socioeconomic status and sense of gain of health-care reform and the mediating role of self-rated health: A cross-sectional study in China

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Research Article

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Relationship between subjective socioeconomic status and sense of gain of health-care reform and the mediating role of self-rated health: A cross-sectional study in China

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Abstract

Background: The sense of gain has gradually become the main evaluation index for the effectiveness of China's deepening reform and is affected by many factors. However, there is no relevant research on the sense of gain of health-care reform (SGHR) and its influencing factors. The purpose of this study was to explore the influence of subjective socioeconomic status (SSS) on SGHR and the mediating role of self-rated health (SRH) between them.

Methods: Data (27,437 samples total) from China Family Panel Studies (CFPS) in 2018 were included in the analysis. A nonparametric test was used to explore the differences in demographic characteristics of SGHR, and a correlation analysis and mediating effect model were used to explore the influence of SSS on SGHR and the mediating effect of SRH.

Results: Demographic characteristics such as age, urban and rural areas, educational background, marriage and choice of medical treatment had significant differences in the distribution of perceived acquisition of medical reform. SSS, SHR and SGHR are positively correlated with each other. SSS not only directly affects SGHR positively but also indirectly affects SGHR through SRH.

Conclusions: SSS is an important predictor of SGHR, and SHR plays a partially mediating role in SGHR.

Key words: Sense of gain of health-care reform, Subjective socioeconomic status, Self-rated health, Mediation effect

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Background

“Difficult and Expensive Medical Treatment” is a serious health problem that has always existed in China and other countries. Since China launched the new health-care reform in 2009, a series of favourable policies have been introduced, and staged progress has been made including but not limited to the following aspects: hierarchical diagnosis and treatment, modern hospital management, universal medical insurance, drug supply guarantees and comprehensive supervision[1-4]. Important health indicators in China beyond the average level of high-income countries and objective indicators such as maternal mortality, infant survival rate and average life expectancy have shown that China’s health service capacity and health of the public have been improved[5]. In a *Lancet* ranking of health-care quality and access in 195 countries and regions released in May 2017, China rose from 60th place in 2015 to 48th place, one of the most notable improvements[6, 7]. Moreover, the evaluation of the World Health Organization (WHO) suggests that the new health-care reform of China regarding the basic health coverage problem of the processing path provides a valuable reference for the world[8]. Although the Chinese government has continuously increased its investment in medical and health-care and various objective indicators have reflected the results of this comprehensive measure, what is the actual benefit to the public? Classical indicators such as satisfaction, well-being and subjective quality of life are typically used to measure the public’s subjective evaluation of the effectiveness of health services, but some experts believe that such indicators are too vague and often difficult to base themselves on objective actual needs, which is not in line with the current reform background in China[9-12]. Therefore, a suitable evaluation index is needed to explain how people feel about the dividend based on the results of health-care reform.

‘Sense of gain’, a social psychology concept to evaluate the effectiveness of a specific reform policy, has gradually become a research hotspot in the context of China’s comprehensive deepening of reform. This concept was used to evaluate the implementation effect of the reform from the subjective view of the public while emphasizing the objective material gain of the public, that is, the possession of public policy interests. Compared with classical concepts such as satisfaction and subjective well-being, sense of gain was of more practical significance in the current reform background of China[9-11, 13].Moreover,some experts suggest that sense of gain had a positive prediction effect on happiness and satisfaction[14, 15]. The public’s sense of gain comes from the effective solution of existing social contradictions, which is usually reflected in the implementation of major livelihood infrastructure projects such as health-care, education, housing and the public environment, as well as the realization of social rights such as fairness and justice. However, current research on the sense of gain has not been specific to a certain field and primarily regards the overall sense of gain of social reform. Therefore, exploring the influencing factors and relevant influencing mechanisms of the public’s sense of gain in medical reform can provide another perspective for evaluating the implementation effect of medical reform. Therefore, exploring the influencing factors and related influencing mechanisms of the public’s sense of gain in health-care reform can provide another perspective for evaluating the effectiveness of health-care reform implementation.

Socioeconomic status affects people’s behaviour patterns, psychological state, knowledge, resource acquisition ability and people’s sense of gain, which is usually measured from two aspects: objective socioeconomic status (SES) and subjective socioeconomic status (SSS). Relevant studies have shown that SES has a positive effect on SGHR. For example, Xiang’s empirical research shows that years of education,

occupational status and income all have a significant positive impact on the sense of gain, and occupational status also has a positive impact on the sense of gain of intergenerational mobility[16]. Using longitudinal data, Lu found that with the improvement of personal living standards and subjective socioeconomic status, the sense of gain also increases[17]. Based on social comparison theory and expectation theory, Wang and Run et al. found that when people compare their SSS with their past or peers, the higher their evaluation of their current socioeconomic status, the stronger their sense of gain[18]. Sun's research confirmed that the higher the socioeconomic status, the higher the urban residents' sense of gain, and the predictive effect of SSS on the sense of gain was stronger than that of SES[19]. In addition, based on the positive prediction effect of the sense of gain on subjective well-being or satisfaction, relevant studies provide indirect evidence for this finding: people with low socioeconomic status also have low happiness and satisfaction and are prone to depression, anxiety, despair and even negative psychological states and behaviours such as self-harm and suicide[20-25]. Conversely, people with higher SES have more sound social functions, higher positive emotions and thus more positive cognitive evaluation of society[26]. As the result of health-care reform is an important source of the public's sense of gain, it can be concluded that SES also positively affects the sense of gain of health-care reform (SGHR).

SGHR are affected not only by socioeconomic status but also by other factors such as an individual's health status. Empirical studies show that self-rated health significantly (SRH) affects residents' SGHR, and residents with lower health levels have a significantly lower SGHR than residents with higher health levels[27]. Relevant studies provide indirect evidence that SRH level is closely related to satisfaction and subjective well-being[28]. For example, Nader's cross-sectional survey of residents in western Iran showed that residents with higher SRH have higher life satisfaction and both physical and mental health[29]. Data from the Canadian Community Health Service Survey showed that with the improvement of residents' SRH, life satisfaction improved correspondingly, and self-rated mental health had a greater positive predictive power on life satisfaction[30]. Data from a survey on the oral health of children and adolescents in Lithuania showed that adolescents with a poor self-perception of oral health were more likely to report lower subjective well-being[31].

Although SRH has an impact on sense of gain, it is also affected by SES. People with higher SES have a higher level of health, which is reflected in physical, psychological and social adaptation. Compared with SES, SSS is more effective in predicting the health level[32, 33], which can better reflect individuals' sense of belonging to a certain social class, future prospects, social phenomena and job opportunities, as well as their attitudes and behaviours toward themselves and others. This trend is reflected in the above and earlier studies[34-36].Therefore, this study explores whether SRH has a potential effect on the relationship between SSS and SGHR. Although some studies explored the potential influencing mechanism of residents' sense of gain and socioeconomic status from the perspective of community identity[37], there is still no relevant research on the potential mechanism in a specific field such as health-care reform.

To provide more sufficient evidence for relevant studies on the influencing factors of SGHR, this study proposes the following two hypotheses:

Hypothesis 1. SSS should have a positive effect on SGHR.

Hypothesis 2. SRH may play a mediating role between SSS and SGHR.

The hypothetical model relationships are shown in Figure 1. If a mediation mechanism is to be established, then it needs to meet the following requirements[38]: (1) The independent variable must influence the

dependent variable, that is, the coefficient c is significant. (2) The independent variable must affect the intermediary variable, that is, the coefficient A is significant. (3) When the independent variable, intermediate variable and dependent variable are included in the model at the same time, the influence of the intermediate variable on the dependent variable must be significant, and the influence of the independent variable on the dependent variable must be less than Equation 1; that is, the significance level or coefficient (absolute value) of coefficient C' decreases compared with coefficient C. When the significance level of coefficient C' decreases or the coefficient (absolute value) decreases, the part of the mediation function of the mediation variable is verified. When the significance level of coefficient C 'disappears completely, the complete mediating effect of the mediator variable is verified. That is, when the mediator variable is controlled, the independent variable has no effect on the dependent variable.

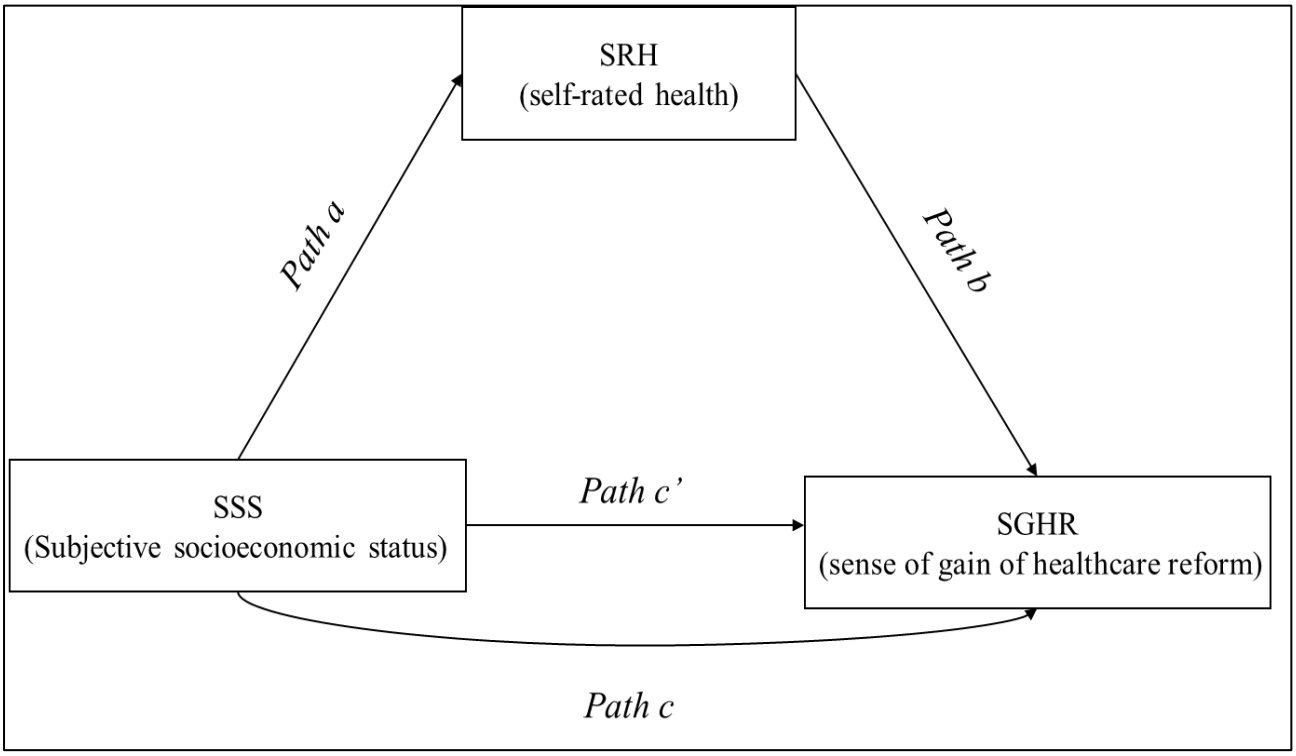

Figure 1 Hypothetical model

Methods

Data

The data used in this study were from the China Family Panel Studies (CFPS), which is a national and comprehensive social tracking survey project that reflects changes in Chinese society, economy, population, education and health[39]. The survey's baseline sample covers 25 provinces/municipalities/autonomous regions, representing 95 percent of China's population. The survey has been followed every two years since the baseline survey in 2010, with four wave tracking data thus far. In this study, individual data in the 2018 CFPS survey were used and updated in November 2019. After excluding non-adult data and missing data of variables concerned, including students, the final sample size was 27,436. SGHR, SRH, SSS and demographic characteristics were the main information in this study. Figure 2 shows the data for the data processing flow.

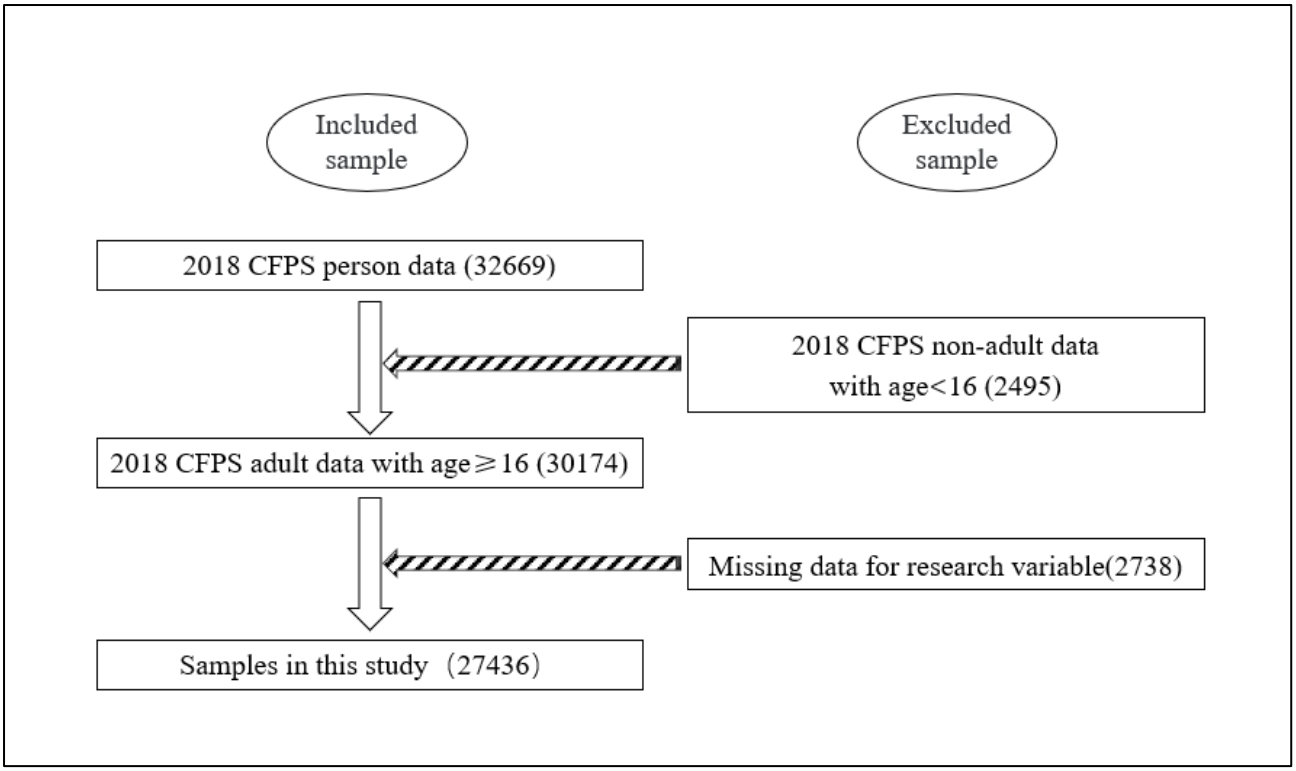

Figure 2 Processing of sample screening

Measures

Sense of gain of health-care reform (SGHR)

In this study, people's subjective evaluation of the current status of China's health-care reform in the questionnaire was taken as people's SGHR. The corresponding question was, 'How serious do you think our country's medical problems are?' The ratings ranged from 0 to 10, with higher scores indicating more serious medical problems. We reverse reset the score of this item: the higher the score, the less serious the health-care problems that are considered, and the higher the SGSR.

Subjective socieconomic status (SSS)

According to the MacArthur scale of subjective social status[40, 41], SSS is measured by two dimensions: evaluation of one's own status in the community and evaluation of one's own social status. The 2018 CFPS Adult Questionnaire included two questions: 'Where is your income locally?' and 'What is your position in society?' Both items were scored on a scale of 1 to 5; the higher the score, the higher the individual's perceived income position or social status. We combined the two[42], and scores were added to form scores of subjective socioeconomic status. The higher the score, the higher the subjective socioeconomic status.

Health status

In this study, SRH was used as an indicator to evaluate individual health status. This indicator can even predict and measure long-term mortality risk, reflecting not only disease status but also health level in many aspects[41, 43, 44]. Respondents were asked, 'How do you feel about your health?' and were asked to choose one of five categories on a scale of one to five: very healthy, very healthy, relatively healthy, average or unhealthy. We also gave the result a reverse assignment: the higher the score, the better the self-rated health status.

Covariates

Other individual-level control variables include age, gender, marital status, education, residence and household status. According to Chinese age classification standards, we divided different age groups into youth, middle and old. Taking into account basic health, we also included indicators such as basic choice of care and trust in doctors and satisfaction with care. The descriptive analysis of the variables included in this paper is shown in Table 1.

Table 1 Descriptive analysis of sample Demographic Characteristics (N=27,436)

Variable	N	%	Mean	SD
Age			47.85	15.98
Young (16-44)	11354	41.38		
Middle (45-59)	8737	31.85		
Old (⩾60)	7345	26.77		
Gender				
Male	13734	50.06		
Female	13702	49.94		
Residence				
Rural	13480	49.13		
Urben	13956	50.87		
Household registration				
Agricultural account	20189	73.59		
Non-agricultural account	7247	26.41		
Education				
Primary school and below	11792	42.98		
Junior middle school	8081	29.45		
High school	4126	15.04		
University/college and above	3437	12.53		
Marital status				
Never married	2632	9.59		
Married with spouse present	22611	82.41		
Cohabitated	124	0.45		
Divorced	567	2.07		
Widowed	1502	5.47		
Choice of medical instiuation				
Clinic	6356	23.17		
Comnunity health service station/Village clinic	4023	14.66		
Comnunity health service centre// Township hospital	5704	20.79		
Special hospital	1578	5.75		
General hospital	9775	35.63		
Satisfaction with medical institutions			3.31	0.98
Trust in doctors			6.70	2.40
SSS			6.02	1.88
HSR			1.95	1.21
SGHR			3.32	2.71

Statistical analysis

SPSS 25.0 software was used for statistical analysis in this study: (1) Descriptive analysis was used to provide a simple report of various variables in this study. Numerical variables are shown in terms of the mean and standard deviation, and classified variables are shown in terms of proportion and quantity, as listed in Table 1. (2) The Harman single-factor test was used to judge whether there is common method bias among the major related questions in the questionnaire. If the explanatory power of the extracted first common factor is less than 40%, then there is no serious method bias among the questions. (3) Since the distribution of SGHRs is not normal, this study uses the independent sample test of the nonparametric test to explore the differences in SGHRs of each classification variable, and pairwise comparisons are conducted among multiple classification variables. (4) Correlation analysis includes the three key variables in the mediation model and preliminarily explores the relationships among them. (5) Referring to the mediating effect model and test method[38, 45, 46], the bootstrap plug-in program PROCESS v3.0 by Andrew F. Hayes in SPSS is used to verify the mediating effect of self-rated health on subjective socioeconomic status and perceived gain of medical reform.

Results

Common method bias test

Three key variables (SSS, SRH and SGHR) were included in the test. In this study, unrotated exploratory factor analysis extracted two factors with characteristic roots greater than 1. The first common factor extracted in this study was SSS, which accounted for 37.62% of the total variance explanation. Therefore, it is believed that there is no serious methodological deviation among key variables[47].

Analysis of differences in SGHR demographic characteristics

Nonparametric test results showed（Table 2） that there was no significant difference in SGHR among people of different genders, and the difference analysis of other categories had statistical significance, with different internal differences.

This is embodied in the following aspects:

(1) The SGHR of the elderly is significantly higher than that of young people, and the older have the highest sense of access to medical reform.

(2) Rural residents have a higher SGHR than urban residents, and the difference in household register is almost the same as the difference in residence.

(3) The results of marital status show that widowed people have the highest SGHR.

(4) There is also a difference in SGHR reflected by different levels of education. In terms of the absolute value of the overall performance, the greater the educational gap, the greater the difference in the sense of gain. People with lower educational levels have higher SGHRs, while those with higher education levels have the lowest sense of gain.

(5) In terms of the choice of medical institutions, those who choose general hospitals generally have a low SGHR, while those who choose primary medical institutions or specialized hospitals have a higher SGHR. In primary medical institutions, people who choose community health service centres or township health centres have higher SGHRs than those who choose clinics or health service stations/village clinics.

Table 2 Nonparametric Test of Differences in SGHR

Variable	Z/K[a]	*p-value*
Age	573.788	0.000**
Young-Middle	-12.579	0.000**
Young-Old	-23.762	0.000**
Middle-Old	-11.167	0.000**
Gender	-1.204	0.229
Residence	-11.232	0.000**
Household register	-13.793	0.000**
Marital status	56.764	0.000**
Divorced- Never married	2.446	0.144
Divorced-Married with Spouse Present	3.669	0.002**
Divorced-Cohabitated	2.868	0.041*
Divorced-Widowed	-6.315	0.000**
Never married- Married with Spouse Present	-2.067	0.379
Never married- Cohabitated	-1.861	0.627
Never married-Widowed	-6.123	0.000**
Married with Spouse Present- Cohabitated	-1.425	1.000
Married with Spouse Present-Widowed	-5.826	0.000**
Cohabitated-Widowed	-0.288	1.000
Education level	768.817	0.000**
University/college and above-Primary school and below	24.570	0.000**
University/college and above-Junior middle school	13.243	0.000**
University/college and above-High school	6.696	0.000**
High school-Primary school and below	17.781	0.000**
High school-Junior middle school	6.012	0.000**
Junior middle school -Primary school and below	14.306	0.000**
Choice of medical instiuation	161.552	0.000**
General hospital-Clinic	-2.923	0.035*
General hospital-Comnunity health service station/Village clinic	-3.095	0.020*
General hospital-Comnunity health service centre// Township hospital	-7.024	0.000**
General hospital-Special hospital	-8.552	0.000**
Clinic-Comnunity health service station/Village clinic	0.482	1.000
Clinic-Comnunity health service centre// Township hospital	-6.904	0.000**
Clinic-Special hospital	-9.841	0.000**
Comnunity health service station/Village clinic-Comnunity health service centre// Township hospital	-6.034	0.000**
Comnunity health service station/Village clinic-Special hospital	8.564	0.000**
Comnunity health service centre// Township hospital - Special hospital	1.682	0.925

Note: [a] indicatesthat the K value is Mann-Whitney test statistics, used for dichotomous variables including gender, residence and household registration; The Z value indicates Kruskal-Wallis test statistics for the remaining multiclassification variables in the table.

*p < 0.05(2-tailed), **p < 0.01(2-tailed)

Correlation analysis

The results of Spearman correlation analysis showed (Table 3) that there was no correlation between

satisfaction with medical institutions and SSS and SRH but there was a positive correlation with SGHR. The degree of trust in doctors was positively correlated with the other four variables, especially with regard to competent socioeconomic status. The correlation between the three variables in the mediation model was statistically significant. This met the basic conditions of the mediation effect analysis: SSS was positively correlated with SRH (R =0.174, P <0.01) and SGHR (R =0.031, P <0.01), and SRH was positively correlated with SGHR (R =0.031, P <0.01).

Table 3 Correlation analysis of main research variables

Variable	1	2	3	4	5
1.Satisfaction with medical institutions	1				
2.Trust in doctors	0.068**	1			
3.SSS	0.001	0.156**	1		
4.SRH	0.010	0.058**	0.174**	1	
5.SGHR	0.057**	0.067**	0.031**	0.024**	1

Note:*p < 0.05(2-tailed), **p < 0.01(2-tailed)

Analysis of mediating effect

Using difference and correlation analyses (after controlling variables such as age, gender, marital status, education level, residence, household registration, choice of medical instiuation, satisfaction with medical institutions and trust in doctors), the hypothesis model was tested according to the mediation effect testing procedure proposed by Wen et al[46]. The model size diagram is shown in Figure 1. The results show that subjective socioeconomic status can affect the sense of gain of health-care reform itself but also has a positive impact on self-rated health, and the latter also has a positive impact on SGHR. The coefficient estimation results of the above relationship are reported in Table 4. The 95% confidence intervals of the bootstrap test results of the five path coefficients do not contain '0', and the differences are statistically significant. Among them, the nonstandardized path coefficients of SSS and SRH to SGHR are 0.0428 and 0.0378, respectively. These values describe the direct effects of the two on the response to SGHR, corresponding to path c' and path b, respectively. At the same time, SSS has an indirect effect on SGHR through the intermediary variable SRH. In the total effect of SSS on SGHR (0.0470), the indirect effect of self-rated health is 0.0041 (path a * b); that is, the mediating variable of SRH mediates 8.72% of the effect, which is incomplete mediation or partial mediation.

Table 4 Test of mediation effects of HSon relationship of SSS to SGHR: Bootstrap results

path/effect	Non-Standardized			
	Coef(β)	**S.E.**	**LLCI**	**ULCI**
C(Total effect)	0.0470	0.0088	0.0297	0.0642
a(SSS-SRH)	0.1090	0.0038	0.1017	0.1165
b(SRH-SGHR)	0.0378	0.0141	0.0110	0.0654
a*b(Indirect effect)	0.0041	0.0016	0.0011	0.0074
c'(Direct effect)	0.0428	0.0089	0.0254	0.0603

Discussion

The new round of health-care reform in China has achieved remarkable results in all aspects, but it is not clear which factors affect people's feelings about this effect and its influencing mechanism. Using 2018 CFPS data, this study explored the differences in SGHRs under different demographic characteristics and proposed two hypotheses about the relationships among SSS, SRH and SGHR as well as their internal influencing paths based on relevant studies. The results of the mediating effect analysis support the hypothesis proposed in this study: that SGHR are directly and positively influenced by SSS, and SRH plays a part in the mediating effect between the two.

In the difference analysis, this study found that first, older people scored higher in the SGHR, especially in the elderly. A possible explanation is that elderly people over the age of 60 or older people experienced a long and complex process of change of medical and health system reform. Given this background, compared with those past, it is easy to feel that the present medical and health conditions, health-care and other aspects of the actual gain have improved. Teenagers, on the other hand, have not experienced hardships or hardships of their parents' or grandparents' time, and they have higher requirements for the health-care environment and stronger expectations of health returns. This is in line with Senik's findings that compared with horizontal comparison with others, longitudinal comparison in the time dimension has a stronger impact on the personal perception of gain and loss[48].This phenomenon can be extended to other areas of social reform and is not limited to the sense of access to medical reform[49-51]. Second, rural people have a higher sense of gain from medical reform than urban people. On the one hand, urban people's expectations of the medical level further improved, and the corresponding urban people's demand for a certain medical level is much higher than the actual improvement of medical services. On the other hand, rural medical resources are relatively scarce, and more debt has existed for a long time. Since China's new health-care reform, the government has increased investment in new rural cooperative medical care, and the primary-level medical and health conditions have changed to a great extent. This has improved rural people's SGHR, especially doctor-patient communication and improvements to the medical institution environment[52, 53]. Another interesting phenomenon is that medical reform benefits widowed people more, which is similar to Wang's findings[37]. In general, widowed people receive more social assistance or welfare, including health assistance and especially economic benefits in health-care insurance. In addition, differences in educational background show that respondents with higher education have a lower sense of medical reform acquisition, which is contrary to the positive impact of SSS on SGHR in this study. Generally, a higher education level means higher socioeconomic status and thus a higher SGHR [54]. Such results may indicate that the evaluation or predictive efficacy of SES and SSS indicators is not entirely consistent[32-36]. At the same time, from another point of view, the young group with higher education is the main employment body in the city, and they bear higher medical insurance costs and medical expenses. Moreover, compared with the elderly, young people have higher expectations for the medical and health conditions around them and do not benefit much from medical reform. The uneven distribution of high-quality health resources aggravates the anxiety of this group, which reflects the realistic medical problem of 'difficult and expensive medical treatment'. Finally, in terms of the selection of daily medical institutions, the results show that compared with other medical institutions, those who often choose general hospitals have the lowest sense of obtaining medical reform, while those who often go to township health centres and community health service centres have the highest SGHR. Such results are consistent with the current status of China's health-care reform. On the one hand, although China's health-care reform has made remarkable achievements in all aspects, the phenomenon of 'difficult and expensive medical treatment' still exists, especially in general hospitals[4, 55, 56]. On the other hand, the coverage, content and quality of primary health services and public health services in China have been significantly improved with the support of health-care reform policies in recent years[1, 2, 4, 5, 8]. Thus, people benefit more from primary health institutions and thus have stronger SGHR. The difference analysis results suggest that these demographic

characteristics may have different degrees of influence on the public's SGHR, so they should be considered as control variables to reduce the mixed impact of mediation analysis.

The results of the correlation analysis provide statistical support for us to explore the mechanism of action among SSS, SG and SGHR; that is, the three are positively correlated with each other. Besides, the relationship between satisfaction with medical institutions and trust in doctors and the three key variables provides hints for the inclusion selection of control variables and may provide indirect evidence for the claim that the sense of gain can predict satisfaction.

Based on the above, the two hypotheses proposed in this study were verified in the results of the mediation effect analysis.

One demonstration is that SGHR is indeed positively affected by SSS. The higher the SSS, the higher the SGHR, which is consistent with the general direction of existing studies[15, 17, 19]. However, as mentioned above, most of the existing studies focus on residents' overall sense of gain from reform rather than the specific field of health reform. Hypothesis 1 is confirmed in the process of medical reform policy implementation. Policy-makers need to attach importance to enhancing the public's SES, especially SSS. Shortening the distance of SSS between people may be of great significance for enhancing the whole SGHR. These policies are not confined to health policy and still need to link to the macrosocial environment such as education, employment and other social security[16, 54, 57-59].

The other demonstration is that SRH has a positive effect on SGHR and plays a partial mediating role in the relationship between SSS and SGHR. As stated earlier, SRH is a comprehensive evaluation about people's physiological health, psychological health and social adaptation level[41, 43, 44]. This is closely related to all kinds of satisfaction or happiness and is reflected in different ages and different health statuses of the crowd. At the same time, the higher SRH of people in the social evaluation is more active and positive[28-30, 60]. This is the key reason that the hypothesis was proposed in this study. In this mediating relationship, the results of this paper first support the classical relationship that SSS has a positive impact on SRH in previous studies. People with higher SSS have more social resources including health resources, which determines their higher health level and health literacy[34-36]. In addition, it is clear that people with higher SRH are more positive in their evaluation of the effectiveness of health-care reform. This suggests that SGHR is indeed closely related to the indicators of happiness and satisfaction[12, 14], but the specific relationship between SGHR and medical satisfaction needs to be supported by more rigorous investigation and evidence. Most important, SRH played a mediating effect of nearly 9%, indicating that SSS exerts an influence on SGHR through SRH in the process of influencing SGHR. In other words, people with strong SSS have higher SRH, which leads to stronger SGHR. Such a logical chain relationship suggests that politicians and scholars need to pay attention to people's health status. Focusing only on social and economic status may easily fall into the trap of the 'Easterlin Paradox'. In addition, the public's SRH is a key factor that reflects whether the health-care reform policy is in place and whether the public gains benefits. This further suggests that SRH plays an important role in assessing and predicting people's social adjustment.

Strengths and Limitations

The results of this study suggest that SSS should be considered an important influence when measuring perceived health reform outcomes, that is, SGHR. The other important result is that this study examined whether SRH mediates the relationship between SSS and SGHR. The above provides important clues for

studying the influencing factors of SGHR or other public policies. However, some limitations existed in this study. First, the measurement of SGHR itself is relatively weak, and its composition mechanism is not clear. Future research should establish a rich and complete scale to improve the credibility of this public policy effect evaluation index. Second, although the main demographic characteristics were taken into account in this study, the results suggest that there should be other important factors playing a role in the relationship between SSS and SGHR, and more evidence is needed for further investigation in the future. Finally, as a cross-sectional study, the causal relationship is difficult to determine, but at least the existing results provide a direction for future research.

Conclusion

In brief, this study explored the relationship between SSS and SGHR by using data from a large-scale cross-sectional survey across the country and tested the mediating effect of SRH between them. With the advancement of the health reform process, it is necessary to have an effect-based evaluation index based on the public's standpoint to endorse it. The SSS and SRH of the public deserve the attention of health policy-makers and relevant scholars or should be included in the evaluation mechanism of the health-care reform policy effect.

Abbreviations

SES: Socioeconomic Status

SSS:Subjective Socioeconomic Status

SGHR:Sense of Gain of Health-Care Reform

SRH:Self-Rate Health

CFPS: China Family Panel Studies

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Author's contribution

SU made contributions to the research from research framework to data analysis and manuscript writing.LI directed research ideas/questions, reviewed the manuscript and used his expertise in health policy to guide the contents of the manuscript.All authors have read and approved the final manuscript.

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Availability of data and materials

The data of the studies is publicly available and could be accessible via website: China Family Panel Studies（CFPS） (pku.edu.cn)

Declarations

Ethics approval and consent to participate

The China Family Panel Studies were approved by the Ethical Committee of Peking University; informed consent was obtained from all individual Participants. The study is conducted in accordance with the ethical standards of the institutional and national research committees and with the 1964 Helsinki Declaration and its subsequent revisions or similar ethical standards. Each volunteer participant obtained a written informed consent based on inclusion criteria.

Consent for publication
Not applicable.

Competing interests
The authors declare that there are no competing interests

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