Factors Associated with Outpatient Satisfaction in Provincial Tertiary Hospitals in Nanchang, China: A Structural Equation Modeling Approach

Xiaojun Zhou 1,†, Qiuwen He 1,†, Qi Li 1, Jie Kuang 1, Yalan Han 2 and Jiayan Chen 1,*

1 Jiangxi Province Key Laboratory of Preventive Medicine, School of Public Health, Nanchang University, Nanchang 330006, China; zhouxiaojun@ncu.edu.cn (X.Z.); liqilq@ncu.edu.cn (Q.L.); kuangjie@ncu.edu.cn (J.K.)
2 Library of Nanchang University, Nanchang University, Nanchang 330006, China; hanyalan@ncu.edu.cn
* Correspondence: palachen@ncu.edu.cn; Tel.: +86-0791-86362283
† These authors contributed equally to this work.

Abstract: Outpatient satisfaction is important in evaluating the performance of tertiary public hospitals in China. However, only a few studies have examined the interaction between outpatient satisfaction and its related factors. This study aimed to explore the relationship between patient satisfaction and its related factors in provincial tertiary hospitals. Six hundred outpatients in three provincial tertiary hospitals in Nanchang, China, were randomly selected. Structural equation modeling was used to analyze the relationship of the factors associated with outpatient satisfaction. The conceptual model fitted the data well ($\chi^2/df = 4.367$, CFI = 0.951, TLI = 0.937, SRMR = 0.055, RMSEA = 0.075), with all the path coefficients being statistically significant ($p < 0.001$). The environment and facilities showed the most significant influence on outpatient satisfaction (standardized total effect = 0.389), followed by the quality of diagnosis and treatment (standardized total effect = 0.235). The waiting time for medical services showed a partial mediation effect of 0.077 between the environment and facilities and outpatient satisfaction. The study indicates that targeted measures should be taken to improve the amenities of hospitals and shorten the waiting time for medical services, thus further improving outpatients’ medical experience.

Keywords: outpatient satisfaction; tertiary hospital; structural equation model; related factors; China

1. Introduction

In China, the health administration organizes three-tier medical institutions to deliver healthcare services to rural and urban residents. The medical institutions are managed in a hierarchical model composed of primary, secondary, and tertiary hospitals according to their functions and tasks [1,2]. The tertiary hospitals (including national, provincial, municipal, and university-affiliated hospitals) are the highest level of medical institutions in China; they provide high levels of general and specialist medical services and undertake the tasks of clinical teaching, training, and scientific research [3]. Owing to the unequal allocation of medical resources, most patients in China tend to visit tertiary hospitals; this has overloaded the hospitals and increased concerns about medical services [4]. To address the issues of medical services supplied further, the general office of the State Council of China promulgated the Opinions on Strengthening the Performance Evaluation of Tertiary Public Hospitals in 2019 [5]. Patient satisfaction was included as an important indicator of the tertiary public hospitals’ performance evaluation index system [5]. The performance assessment results reported by the National Health Commission of China indicated that the patients were not satisfied with outpatient services, such as the environment and facilities of the hospital and doctor–patient communication [6]. Therefore, the issues regarding outpatient services need to be addressed.
Although previous studies have typically concentrated on reporting patient satisfaction and its related factors [7,8], only a few studies have systematically examined the association between them. For example, Ren and colleagues examined the effects of waiting time, doctor–patient communication, professional services, and accessibility for treatment information on patient satisfaction in hospitals in Henan, China [9]. However, considering the differences in socioeconomic levels in different areas of China, the findings may be limited in generalization. At present, further research is needed to explore the relative importance of the various factors related to outpatient satisfaction with tertiary hospitals in China and the actual relationship between them.

In this context, this study aimed to employ a structural equation modeling (SEM) approach that evaluates the relationship between outpatient satisfaction and its related factors. Since this is one of the first studies to undertake an SEM analysis of outpatient satisfaction with tertiary hospitals in China, it is hoped that this research will enhance our understanding of outpatient satisfaction improvement.

1.1. Relationship between Waiting Time for Medical Services, Environment and Facilities, and Outpatient Satisfaction

Recent evidence suggests that the waiting time for medical services impacts outpatient satisfaction [10–12]. For example, most tertiary hospitals in China have experienced a massive influx of patients, with up to 20,000 daily outpatient visits [4,13]. This massive influx of patients places the tertiary hospitals under extreme tension, leading to extended waiting times and inadequate doctor–patient communication, reducing the outpatients' perceived satisfaction with visits [11]. Although methods such as improving appointment systems have been used to reduce the waiting time, outpatients still face long waits due to the imbalance between supply and demand for medical services [11]. The long waits may lead to inadequate treatment and poor doctor–patient communication, provoke the occurrence of doctor–patient conflicts, and result in dissatisfaction [14]. Related research has confirmed the prevalence of this phenomenon in developing countries [15].

The environment and facilities of the hospital were reported to have a close association with the waiting time for medical services [16]. Previous studies have confirmed that well-organized amenities such as clear signage settings, appropriate spatial layout, and guidance services could effectively decrease the waiting time [17]. In addition, the environment and facilities have been found to have a close relationship with outpatient satisfaction [18,19]. The outpatients’ first impression of the hospital starts with the outpatient setting. A noisy, crowded, and uncomfortable outpatient environment generates negative feelings and low satisfaction [18,20].

1.2. Relationship between Quality of Diagnosis and Treatment, Costs of Diagnosis and Treatment, and Outpatient Satisfaction

The quality of diagnosis and treatment is essential to outpatient satisfaction [21,22]. It is found that patients in China are most concerned with the quality of medical service issues [23]. When the patients believe their health status will improve after receiving the medical treatment, their trust and satisfaction with the hospital or the practitioner will be enhanced [24,25]. Previous studies have indicated the crucial impacts of diagnosis and treatment quality on patient satisfaction in China [23,26].

The costs of diagnosis and treatment are also related to outpatient satisfaction [27]. Several studies have proved that the higher costs of diagnosis and treatment resulted in lower patient satisfaction [28,29]. It is indicated that the diagnosis and treatment costs are associated with patients’ treatment expectancy. If patients expect too much from the effects of diagnosis and treatment, they may perceive that the medical treatment is not as effective as expected and claim that the fees paid for the medical services are not that worthy, which results in strong dissatisfaction with the hospital [30]. In China, several studies demonstrated that medical fees have been a salient concern for outpatients and were one of the critical influences on outpatient satisfaction [27,31].
Furthermore, the diagnosis and treatment costs may be affected by the quality of diagnosis and treatment [32]. The profit-seeking behavior of the medical institution and information asymmetry may lead to excessive examination and over-treatment, which are a constant feature of some hospitals, significantly increasing the patients’ out-of-pocket costs [31,33]. As a result, significant financial burden is imposed on patients and causes high patient dissatisfaction [7].

1.3. Theoretical Hypothesis

Taken together, this study has the following hypothesis:

Hypothesis 1 (H1). The environment and facilities, the quality of diagnosis and treatment, the waiting time for medical services, and the diagnosis and treatment costs directly affected outpatient satisfaction.

Hypothesis 2 (H2). The waiting time for medical services mediated the environment and facilities and outpatient satisfaction.

Hypothesis 3 (H3). The diagnosis and treatment costs mediated the quality of diagnosis and treatment and outpatient satisfaction.

2. Materials and Methods

2.1. Participants

Outpatients from provincial tertiary hospitals in Nanchang, China, were selected. The outpatients refer to those who completed the medical treatment process at the selected hospital and provided informed consent at the time of the survey. Patients using other services (emergency, special needs, inpatient, health check-ups, and consultation) were excluded. A simple random sampling method was applied. Three hospitals were randomly selected from the twelve provincial tertiary hospitals in Nanchang City. The outpatients were selected in each hospital using an equal-volume sampling method (200 participants from each).

2.2. Survey Methods

The survey was conducted from January to February 2021, based on the Third-Party Evaluation of the National Action Plan for Improving Medical Services Further [34]. It is noted that this survey was conducted during the coronavirus disease 2019 (COVID-19) pandemic. However, due to China’s effective prevention and control activities, no confirmed COVID-19 cases were reported in Nanchang city during the study. Therefore, the present study did not include variables related to the pandemic.

With the coordination of the hospitals, the third-party investigators who had undergone unified training performed the survey. The investigators stayed in the outpatient pharmacy and distributed the questionnaire to the outpatients, who completed the medical treatment process. A systematic sampling approach was used. The participants were selected every five intervals (k = 5) according to their outpatient sequential number until the expected sample size of each hospital was achieved. If the selected outpatient refused to participate, the next patient was administered the questionnaire. Before distributing the questionnaire, the investigators briefly explained the purpose, significance, and content of the survey and obtained written informed consent from the participants. Then, the participants were asked to complete an anonymous and self-administered questionnaire. After returning the questionnaire, the investigators checked if there were missing or incorrect responses and requested the participants to add or correct the information. Finally, 662 patients were investigated, and 62 of them declined the survey (90.63% response rate). Six hundred valid questionnaires were returned, an effective recovery rate of 100%.
2.3. Survey Contents

This survey was adapted from the questionnaire used in the Third-Party Evaluation of the National Action Plan for Improving Medical Services Further [34]. It included two main sections: (1) basic information about patients, such as gender, age, occupation, education level, and type of medical insurance; (2) information on outpatient satisfaction, including the environment and facilities (adequate seats in the waiting room, clean water in the waiting room, clear signage settings, appropriate spatial layout, and guidance/self-services), quality of diagnosis and treatment (communication about patients’ condition, explanation of medical examination reports, explanation of treatment protocols, over-diagnosis and over-treatment, respect and comfort, and respect for confidentiality), waiting time for medical services, diagnosis and treatment costs, and overall satisfaction. The Likert scale scoring method (0–5) was used to evaluate the outpatient satisfaction. Higher scores indicated a greater degree of satisfaction. The questionnaire used in this study is presented in the Supplementary Materials.

2.4. Statistical Analysis

Continuous variables were described as the mean and standard deviation, and the categorical variable was shown as the frequency and constituent ratio. The outpatient satisfaction differences in participant characteristics were compared using the t-test or analysis of variance. The conceptual model was constructed and evaluated using SEM. In order to determine whether the items (observed variables) could reflect the corresponding two latent variables (the environment and facilities and quality of diagnosis and treatment), an exploratory factor analysis (EFA) was conducted. The principal component analysis and varimax rotation were performed in EFA. The criterion of eigenvalue >1 was used for retaining the number of components. The SEM was applied to analyze the relationship between outpatient satisfaction and its related factors. The maximum likelihood estimation was performed in the SEM. The ratio of chi-square to degrees of freedom ($\chi^2/df$), comparative fit index (CFI), Tucker–Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) were reported. The acceptable fit index criteria used in SEM were as follows: $\chi^2/df < 5.00$, CFI > 0.90, TLI > 0.90, SRMR < 0.08, and RMSEA < 0.10. The significance level was set at $\alpha = 0.05$ (two-tailed).

3. Results

3.1. Characteristics and Outpatient Satisfaction of the Participants

The characteristics of the participants are shown in Table 1. The participants’ mean age was 38.69 years. The majority were female (72.83%), local residents (85.00%), with an urban household registration (67.83%). Nearly half (49.50%) had undergraduate or junior college education. In addition, 33.00% of the outpatients were enterprise employees, 43.00% reported annual household incomes of less than CNY 60,000, and 42.83% had resident medical insurance. The overall outpatient satisfaction was 4.62 ± 0.62. No significant differences in satisfaction were observed in the characteristics.

3.2. Validation of the Measurement Models

For validation of the measurement models, 55 outpatients were selected. The KMO measure of sampling adequacy (0.834) and Bartlett’s test of sphericity ($\chi^2 = 486.22, p < 0.001$) indicated an appropriate correlation matrix for EFA. A two-factor structure with each eigenvalue >1 (6.21 and 1.45) was shown in Table 2. The two-factor solution accounted for 69.63% of the total variance. Factor 1 showed greater loadings on six items, reflecting the quality of diagnosis and treatment. Factor 2 showed more significant loadings on the other five items, which indicated the environment and facilities of the hospital. Cronbach $\alpha$ coefficients for the two factors were 0.915 and 0.802, suggesting good internal consistencies of the two measurement models. It is noted that several items (such as adequate seats in the waiting room) were suspected to be cross-loading. Their loadings in both Factor 1 and
Factor 2 were >0.40. We tried to remove these items and found that deleting the items hardly changed the factor structure, but reduced the internal consistency of the questionnaire. Since previous research has demonstrated that an item could be assigned to the common factor that reported the highest loading [35], the items were retained in the questionnaire.

Table 1. Characteristics of the participants.

| Characteristics                        | N (%)     | Satisfaction (Mean ± SD) | t/F       | p     |
|----------------------------------------|-----------|--------------------------|-----------|-------|
| Gender                                 | Male      | 163 (27.17)              | 4.57 ± 0.59 | −1.11 | 0.266 |
|                                        | Female    | 437 (72.83)              | 4.63 ± 0.63 |       |       |
| Age, years                             | <30       | 202 (33.67)              | 4.57 ± 0.68 | 1.17  | 0.311 |
|                                        | 30–49     | 249 (41.50)              | 4.66 ± 0.58 |       |       |
|                                        | ≥50       | 149 (24.83)              | 4.61 ± 0.61 |       |       |
| Residence                              | Local     | 510 (85.00)              | 4.62 ± 0.62 | 0.46  | 0.645 |
|                                        | Resident  | 90 (15.00)               | 4.59 ± 0.63 |       |       |
| Household registration                 | Rural     | 193 (32.17)              | 4.54 ± 0.71 | −1.96 | 0.051 |
|                                        | Urban     | 407 (67.83)              | 4.65 ± 0.57 |       |       |
| Education                              | Junior    | 128 (21.33)              | 4.52 ± 0.70 | 2.06  | 0.105 |
|                                        | high school and below | 150 (25.00) | 4.71 ± 0.55 |       |       |
|                                        | Senior    | 297 (49.50)              | 4.61 ± 0.62 |       |       |
|                                        | high school/Technical | 47 (7.83)   | 4.64 ± 0.53 |       |       |
|                                        | secondary school/Technical school | 32 (5.33) | 4.44 ± 0.84 |       |       |
|                                        | Undergraduate/Junior college | 47 (7.83) | 4.64 ± 0.53 |       |       |
|                                        | Postgraduate and above | 25 (4.17)  | 4.64 ± 0.57 |       |       |
| Occupation                             | Civil     | 162 (27.00)              | 4.72 ± 0.53 | 1.94  | 0.086 |
|                                        | servant/State-owned enterprise | 127 (21.17) | 4.62 ± 0.60 |       |       |
|                                        | employee  | 44 (7.33)                | 4.48 ± 0.73 |       |       |
|                                        | Private   | 32 (5.33)                | 4.44 ± 0.84 |       |       |
|                                        | enterprise employee | 47 (7.83)  | 4.64 ± 0.53 |       |       |
|                                        | Retiree   | 188 (31.33)              | 4.59 ± 0.64 |       |       |
| Annual household income, CNY           | <60,000   | 258 (43.00)              | 4.57 ± 0.62 | 1.57  | 0.209 |
|                                        | 60,000–120,000 | 158 (26.33) | 4.61 ± 0.68 |       |       |
|                                        | ≥120,000  | 184 (30.67)              | 4.68 ± 0.57 |       |       |
| Medical insurance                      | Employee  | 205 (34.17)              | 4.64 ± 0.59 | 2.57  | 0.077 |
|                                        | medical insurance | 258 (43.00) | 4.55 ± 0.69 |       |       |
|                                        | others    | 137 (22.83)              | 4.69 ± 0.51 |       |       |

1 Abbreviations: SD, standard deviation.

3.3. Relationship between Outpatient Satisfaction and Its Related Factors Based on SEM

The initial model was constructed according to the theoretical hypothesis put forward in the introduction (Figure 1). The initial model showed an acceptable fit to the sample data ($\chi^2/df = 4.789$, CFI = 0.934, TLI = 0.918, SRMR = 0.056, RMSEA = 0.080). However, the two path coefficients denoted non-significant relationships (quality of diagnosis and treatment → diagnosis and treatment costs, $p = 1.000$; diagnosis and treatment costs → outpatient satisfaction, $p = 0.542$), suggesting that the initial model needed to be modified.
Table 2. Validation of the measurement models.

| Items of the Questionnaire                              | Factor 1 | Factor 2 |
|---------------------------------------------------------|----------|----------|
| over-diagnosis and over-treatment                      | 0.937    | 0.010    |
| explanation of medical examination reports             | 0.879    | 0.271    |
| respect for confidentiality                            | 0.770    | 0.226    |
| communication about patients’ condition                | 0.768    | 0.404    |
| respect and comfort                                    | 0.670    | 0.496    |
| explanation of treatment protocols                     | 0.669    | 0.501    |
| appropriate spatial layout                             | 0.301    | 0.796    |
| clean water in the waiting room                        | 0.229    | 0.795    |
| clear signage settings                                 | 0.293    | 0.765    |
| guidance/self-service 1                                | 0.072    | 0.741    |
| adequate seats in the waiting room                     | 0.492    | 0.518    |
| communication about patients’ condition                | 0.492    | 0.518    |
| % of the variance                                       | 56.48    | 13.15    |

Notes: Factors were extracted by principal component analysis and were rotated by varimax rotation. The highest factor-loading of each item was highlighted in bold.

1 Guidance service refers to consultation services (e.g., informing the patients of the department’s location, recommending the department to visit) provided by guide-service staff. Self-service means that the patients use self-service machines equipped in the hospital for registration, payment, and retrieving physicians’ information.

Figure 1. The initial model of outpatient satisfaction in provincial tertiary hospitals.

We removed the indicator (diagnosis and treatment costs) that had a non-significant relationship with other variables. The corrected model (Figure 2) had a good fit ($\chi^2/df = 4.367$, CFI = 0.951, TLI = 0.937, SRMR = 0.055, RMSEA = 0.075) with all path coefficients being statistically significant ($p < 0.001$).
Figure 2. The corrected model of outpatient satisfaction in provincial tertiary hospitals.

### 3.4. Effects of the Factors on the Outpatient Satisfaction Based on SEM

As shown in Table 3, both the quality of diagnosis and treatment and the waiting time for medical services directly affected outpatient satisfaction, with the standardized direct effects of 0.235 and 0.153. The environment and facilities, directly and indirectly, affected outpatient satisfaction, with a total effect of 0.389. The waiting time for medical services partially mediated the environment and facilities and the outpatient satisfaction, with a mediation effect of 0.077, accounting for 19.79% of the total effect (0.389).

| Indicators            | Standardized Direct Effect | Standardized Indirect Effect | Standardized Total Effect |
|-----------------------|----------------------------|------------------------------|---------------------------|
| environment and facilities | 0.312                      | 0.077                        | 0.389                     |
| quality of diagnosis and treatment | 0.235                      | -                            | 0.235                     |
| waiting time for medical services | 0.153                      | -                            | 0.153                     |

Abbreviations: SEM, structural equation model.

### 4. Discussion

This study found an outpatient satisfaction of 4.62 ± 0.62 in China, which was higher than observed in previous studies [23,36]. This finding might be explained by the fact that the outpatient service management (such as the medical service process, rational use of medicine, level of medical technology, and internal management of health facilities) has improved in China in recent years [6]. These considerable efforts made by the Chinese government have created favorable conditions for meeting the outpatients’ health needs, thus increasing their overall satisfaction with outpatient services.

Using an SEM model, our study also evaluates the relationship between outpatient satisfaction and its related factors. The results indicate that the environment and facilities, the quality of diagnosis and treatment, and the waiting time for medical services are...
directly associated with outpatient satisfaction with provincial tertiary hospitals in China, partly in line with our first hypothesis. In detail, the environment and facilities have the most significant influence on outpatient satisfaction, followed by the quality of diagnosis and treatment.

Numerous studies have confirmed the positive impact of the environment and facilities on outpatient satisfaction [18,37]. Similar to these studies, our findings further support the significance of environment and facilities in outpatient satisfaction. In our study, the environment and facilities were attributed to clear signage settings, appropriate spatial layout, adequate seats in the waiting room, clean water in the waiting room, and guidance/self-service. The clear signage settings are essential in optimizing the outpatients’ triage [38]. The appropriate spatial layout could reduce ineffective movement of the outpatients [17]. Adequate seats and clean water in the waiting room create a comfortable environment, which may alleviate the outpatients’ negative emotions and avoid the chaos caused by the long waiting time [18,37,39]. In addition, practical guidance or self-services helps select the appropriate departments [39]. Based on our findings, promoting the services above is particularly important for improving the outpatients’ health-seeking experiences.

Another finding in our study is that the quality of diagnosis and treatment directly affects outpatient satisfaction. It is consistent with that of Zhou and colleagues [21]. First, the primary purpose of seeking medical service for most outpatients in China is to be cured [4,14]. However, most of them lack medical expertise. The information asymmetry may contribute to the tendency toward dependence on clinicians [31]. Therefore, promoting patient–doctor communication and having a patient and meticulous attitude to explaining the medical examination reports and treatment protocols may improve the outpatients’ satisfaction [13,40]. Second, with the changes in health needs, humanistic care, such as respect, comfort, and confidentiality, receives growing attention from the outpatients [4]. Therefore, enhancing the non-medical aspects of healthcare is vital in improving the outpatients’ satisfaction.

The results of the SEM also demonstrated that the waiting time for medical services is a relevant factor for outpatient satisfaction, supporting evidence from Ma and colleagues [11]. This finding could be attributed to a universal phenomenon called “three long one short” (long queues for registration, medical examination, payment, and a short time for diagnosis and treatment) in the tertiary public hospitals in China [14,39]. When the waiting time is longer than expected, the patients may be prone to negative emotions, affecting their satisfaction [41]. One interesting finding in our study is that the waiting time for medical services partially mediated the relationship between the environment and facilities and outpatient satisfaction, which agrees with our second hypothesis and is consistent with the findings of Sun and colleagues [42]. It has been suggested that both the appropriate spatial layout and guidance service supplied contribute to shortening the waiting time, improving the outpatients’ satisfaction [16]. In this regard, the tertiary public hospitals should strengthen the construction of amenities and optimize triage of the outpatients, shortening their waiting time. On the other hand, improving the outpatient appointment service and rationalizing the visit schedule of patients may also help improve outpatient satisfaction [19].

Although we assumed that the diagnosis and treatment costs play a role in outpatient satisfaction, no significant correlation was found. This result might be attributed to the implementation of policies in China, such as cancellation of the drug price addition, instruction of reasonable laboratory examinations [39], strict price regulation of medical services [7], the increased proportion of essential medicines in outpatient prescriptions [6], and the changing orientation of tertiary hospitals [43]. Implementing these policies promotes the rational use of drugs. This makes hospital charges more transparent, which may interfere with the association between the diagnosis and treatment costs and outpatient satisfaction.

Although we focus our study on outpatient satisfaction with provincial tertiary hospitals and present a better explanation of the association between outpatient satisfaction and its related factors based on SEM, several limitations need to be noted regarding the current
study. First, the present study was conducted during the COVID-19 pandemic, therefore it can be argued that the medical resources supplied might be influenced by the prevention and control of the epidemic. Therefore, it might have an impact on the study outcomes. However, due to China’s effective prevention and control activities, no confirmed cases were reported in Jiangxi Province from March 2020 to October 2021. That is, during the implementation of the study, the participants were living a normal social life. Therefore, it is indicated that the effects of factors related to the COVID-19 pandemic on the study outcomes were limited. Second, since we aimed to investigate the outpatient satisfaction with provincial tertiary hospitals, the findings may be limited while generalizing to lower-level hospitals or clinics. Third, most of the outpatients in our study were from central China. Therefore, given the differences in sociodemographic characteristics, whether the findings based on the samples could be generalized to populations in other areas of China is unknown. Fourth, the present study mainly investigates the factors related to health-seeking experiences. Therefore, the role of other factors such as the severity of disease and emotions is unknown. Further investigation of these factors is needed. Finally, although the SEM approach was applied to assess the association between outpatient satisfaction and its related factors, the inference on causality was limited due to the cross-sectional study design.

5. Conclusions

The present study indicates that outpatient satisfaction with provincial tertiary hospitals in China is relatively high. The environment and facilities of hospitals show the most significant impact on outpatient satisfaction. Their correlation is partially mediated by the waiting time for medical services. The findings suggest that more attention should be paid to the non-health aspects of medical services while improving the quality of healthcare delivery. Therefore, the decision-makers should emphasize the outpatients’ health-seeking experiences and take targeted measures to improve the amenities of hospitals and shorten the waiting time for medical services.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/ijerph19148226/s1, The questionnaire used in this study is available at the Supplementary Materials.

Author Contributions: Conceptualization: X.Z. and J.C.; Data curation: Q.H. and Q.L.; Formal analysis: Q.H., J.K., Y.H. and J.C.; Funding acquisition: X.Z. and J.C.; Methodology: X.Z. and J.C.; Supervision: X.Z.; Validation: J.C. and Q.L.; Writing—original draft preparation: X.Z. and Q.H.; Writing—review & editing: J.C., J.K., Q.L. and Y.H. All authors have read and agreed to the published version of the manuscript.

Funding: This study was supported by the Project of Third-Party Evaluation of the Action Plan for Improving Medical Services Further (grant number JXSWSJKW0012), the Project of Construction, Review, and Evaluation of Jiangxi Provincial Catalog of Diagnostic Reagents and Low-Value Medical Consumables (grant number JXSYCFZX0029), and the Doctoral Research Start-up Fund of Nanchang University.

Institutional Review Board Statement: This study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board of Jiangxi Provincial Health Commission (No. 2021JXSWJW007).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are made available by contacting the corresponding author and the first authors.

Acknowledgments: The authors would like to thank all staff members who participated in the present study for their efforts in the data collection.

Conflicts of Interest: The authors declare no conflict of interest.
References

1. Zhang, W.; Deng, Z.; Evans, R.; Xiang, F.; Ye, Q.; Zeng, R. Social media landscape of the tertiary referral hospitals in China: Observational descriptive study. J. Med. Internet Res. 2018, 20, e249. [CrossRef] [PubMed]

2. Li, X.; Huang, J.; Zhang, H. An analysis of hospital preparedness capacity for public health emergency in four regions of China: Beijing, Shanghai, Guangxi, and Hainan. BMC Public Health 2008, 8, 319. [CrossRef]

3. Zhang, L.; Wang, Y. Hospital Administration; People’s Health Publishing House: Beijing, China, 2005.

4. Hu, L.; Ding, H.; Hu, G.; Wang, Z.; Liu, S.; Liu, Y. How perceived quality of care affects outpatient satisfaction in China: A cross-sectional study of 136 tertiary hospitals. Inquiry 2019, 56, 46958019895397. [CrossRef] [PubMed]

5. Opinions of the General Office of the State Council on Strengthening the Performance Evaluation of Tertiary Public Hospitals. Available online: http://www.gov.cn/zhengce/content/2019-01/30/content_5362266.htm (accessed on 14 March 2022). (In Chinese)

6. Circular of the General Office of the NHC on National Monitoring and Analysis of the Performance Evaluation of Tertiary Public Hospitals in 2019. Available online: http://www.nhc.gov.cn/yzygj/s3594q/202103/559684cae3e6485fb30997b0b081ac3f0.shtml (accessed on 14 March 2022). (In Chinese)

7. Hu, L.; Ding, H.; Liu, S.; Wang, Z.; Hu, G.; Liu, Y. Influence of patient and hospital characteristics on inpatient satisfaction in China’s tertiary hospitals: A cross-sectional study. Health Expect. 2020, 23, 115–124. [CrossRef]

8. Kim, C.E.; Shin, J.S.; Lee, J.; Lee, Y.J.; Kim, M.R.; Choi, A.; Park, K.B.; Lee, H.J.; Ha, I.H. Quality of medical service, patient satisfaction and loyalty with a focus on interpersonal-based medical service encounters and treatment effectiveness: A cross-sectional multilecture study of complementary and alternative medicine (CAM) hospitals. BMC Complement. Altern. Med. 2017, 17, 174. [CrossRef]

9. Ren, W.; Sun, L.; Tarimo, C.S.; Li, Q.; Wu, J. The situation and influencing factors of outpatient satisfaction in large hospitals: Evidence from Henan province, China. BMC Health Serv. Res. 2021, 21, 500. [CrossRef] [PubMed]

10. Alarcon-Ruiz, C.A.; Heredia, P.; Taype-Rondan, A. Association of waiting and consultation time with patient satisfaction: Secondary-data analysis of a national survey in Peruvian ambulatory care facilities. BMC Health Serv. Res. 2019, 19, 439. [CrossRef] [PubMed]

11. Ma, W.M.; Zhang, H.; Wang, N.L. Improving outpatient satisfaction by extending expected waiting time. BMC Health Serv. Res. 2019, 19, 565. [CrossRef] [PubMed]

12. Almoman, I.; Al Sarheed, A. Enhancing outpatient clinics management software by reducing patients’ waiting time. J. Infect. Public Health 2016, 9, 734–743. [CrossRef] [PubMed]

13. Li, Y.; Gong, W.; Kong, X.; Mueller, O.; Lu, G. Factors associated with outpatient satisfaction in tertiary hospitals in China: A systematic review. Int. J. Environ. Res. Public Health 2020, 17, 7070. [CrossRef] [PubMed]

14. Yu, X.; Bao, H.; Shi, J.; Yuan, X.; Qian, L.; Feng, Z.; Geng, J. Preferences for healthcare services among hypertension patients in China: A discrete choice experiment. BMJ Open 2021, 11, e053270. [CrossRef] [PubMed]

15. Atinga, R.A.; Akosen, G.; Bawontuo, V. Perceived character.istic of outpatient appointment scheduling association with patient satisfaction and treatment adherence: An innovation theory application. Hosp. Pract. (1995) 2021, 49, 298–306. [CrossRef] [PubMed]

16. Liu, Z. Analysis of Visiting Experience and Associated Factors of Overall Satisfaction of Obstetrics and Gynecology and Pediatric Outpatients in Provincial Maternal and Children’s Tertiary Hospitals in China. Master’s Thesis, Peking Union Medical College, Beijing, China, 2019. (In Chinese).

17. Zhao, Y.; Li, M.; Qiu, C. Analysis of survey results of outpatient satisfaction of medical experience in a tertiary grade—A hospital. Chin. Hosp. Manag. 2020, 40, 83–85. (In Chinese)

18. Campos Andrade, C.; Lima, M.L.; Pereira, C.R.; Fornara, F.; Bonaiuto, M. Inpatients’ and outpatients’ satisfaction: The mediating role of perceived quality of physical and social environment. Health Place 2013, 21, 122–132. [CrossRef] [PubMed]

19. Mazaheri Habibi, M.R.; Afshari, F.M.; Tabesh, H.; Vakili-Arki, H.; Abu-Hanna, A.; Esfandiari, S. Evaluation of patient satisfaction of the status of appointment scheduling systems in outpatient clinics: Identifying patients’ needs. J. Adv. Pharm. Technol. Res. 2018, 9, 51–55. [CrossRef]

20. Hu, Y.; Zhang, Z.; Xie, J.; Wang, G. The outpatient experience questionnaire of comprehensive public hospital in China: Development, validity and reliability. Int. J. Qual. Health Care 2017, 29, 40–46. [CrossRef]

21. Zhou, F.; Xu, C.; Sun, Y.; Meng, X. Influencing factors of outpatients’ satisfaction in 16 China cross-sectional study of public tertiary hospitals. Patient Prefer. Adherence 2012, 15, 1243–1258. [CrossRef] [PubMed]

22. Abbasi-Moghaddam, M.A.; Zarei, E.; Bagherzadeh, R.; Dargahi, H.; Farrokhii, P. Evaluation of service quality from patients’ viewpoint. BMC Health Serv. Res. 2019, 19, 170. [CrossRef]

23. Sun, J.; Hu, G.; Ma, J.; Chen, Y.; Wu, L.; Liu, Q.; Hu, J.; Livoti, C.; Jiang, Y.; Liu, Y. Consumer satisfaction with tertiary healthcare in China: Findings from the 2015 China national patient survey. Int. J. Qual. Health Care 2017, 29, 213–221. [CrossRef] [PubMed]

24. Zarei, E.; Daneshkohan, A.; Khahdari, R.; Arab, M. The effect of hospital service quality on patient’s trust. Iran. Red Crescent Med. J. 2015, 17, e17505. [CrossRef]

25. Simsekler, M.C.E.; Alhashmi, N.H.; Azar, E.; King, N.; Luqman, R.; Al Mulaa, A. Exploring drivers of patient satisfaction using a random forest algorithm. BMC Med. Inform. Decis. Mak. 2021, 21, 157. [CrossRef] [PubMed]
26. Chang, C.S.; Chen, S.Y.; Lan, Y.T. Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Serv. Res.* 2013, 13, 22. [CrossRef]

27. Li, J.; Wang, P.; Kong, X.; Liang, H.; Zhang, X.; Shi, L. Patient satisfaction between primary care providers and hospitals: A cross-sectional survey in Jilin province, China. *Int. J. Qual. Health Care* 2016, 28, 346–354. [CrossRef] [PubMed]

28. Chow, W.L.; Wang, VW.; Low, Y.S.; Tse, D.W.; Lim, J.F. Factors that influence the choice of seeking treatment at polyclinics. *Singap. Med. J.* 2012, 53, 109–115.

29. Huerta, T.R.; Harle, C.A.; Ford, E.W.; Diana, M.L.; Menachemi, N. Measuring patient satisfaction’s relationship to hospital cost efficiency: Can administrators make a difference? *Health Care Manag. Rev.* 2016, 41, 56–63. [CrossRef]

30. Gao, J.; Liu, D. Outpatients’ satisfaction degree and influencing factors of a hospital in Chongqing city. *Med. Soc.* 2019, 32, 74–76. (In Chinese)

31. Liang, H.; Xue, Y.; Zhang, Z.R. Patient satisfaction in China: A national survey of inpatients and outpatients. *BMJ Open* 2021, 11, e049570. [CrossRef] [PubMed]

32. McCollum, R.; Chen, L.; Chen, X.T.; Liu, X.; Starfield, B.; Jinhuang, Z.; Tolhurst, R. Experiences with primary healthcare in Fuzhou, urban China, in the context of health sector reform: A mixed methods study. *Int. J. Health Plan. Manag.* 2014, 29, e107–e126. [CrossRef] [PubMed]

33. Wang, Y. Research on the Mechanism of Occurrence and Prevention of Doctors’ Moral Hazard Behavior. Ph.D. Thesis, China University of Mining and Technology, Beijing, China, 2021. (In Chinese).

34. Circular of the General Office of the NHC on the Third-Party Evaluation of the 2019–2020 Action Plan for Improving Medical Services Further. Available online: http://www.nhc.gov.cn/yzygj/s3594q/202012/cbe1e9b17ab44e58be4c14587f8132ee.shtml (accessed on 14 March 2022). (In Chinese)

35. Díaz Heredia, L.P.; Muñoz Sánchez, A.I.; de Vargas, D. Reliability and validity of spirituality questionnaire by Parsian and Dunning in the Spanish version. *Rev. Lat. Am. Enferm.* 2012, 20, 559–566. [CrossRef] [PubMed]

36. Tang, L. The influences of patient’s satisfaction with medical service delivery, assessment of medical service, and trust in health delivery system on patient’s life satisfaction in China. *Health Qual. Life Outcomes* 2012, 10, 111. [CrossRef] [PubMed]

37. Zhao, S.; He, Q. Prevention and control measures of COVID-19 in the outpatient department of a large general hospital. *Mod. Prev. Med.* 2020, 47, 2195–2198. (In Chinese)

38. Sun, C.; Yan, S.; Zhang, Y.; Zhang, X. Discussion of hospital management countermeasures based on the analysis of outpatients satisfaction survey. *J. Chin. Res. Hosp.* 2021, 8, 22–26. (In Chinese) [CrossRef]

39. Chen, G.; Jin, X. Investigation on the satisfaction of the in- and out-patients. *Med. Soc.* 2005, 6, 12–15. (In Chinese)