What Are the Risk Factors of Negative Patient Experience? A Cross-Sectional Study in Chinese Public Hospitals

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Abstract
Hospitals are struggling to involve patients and learn from their experience. The risk factor of patient experience is increasingly recognized as a critical component in improving patient experience. Our study explored risk factors of negative patient experience in order to improve the health-service quality of public hospitals. We conducted a cross-sectional study in Hubei province, China. A total of 583 respondents were surveyed by the Outpatient Experience Questionnaire with good validity and reliability in July 2015. T-tests were conducted to compare the experience scores among different outpatient groups. Multiple linear regression was performed to determine the significant factors that influenced the outpatient experience. Outpatients between 18 and 44 years old had the lowest experience scores (65.89 ± 0.79), whereas outpatients completely paying out-of-pocket had the lowest experience scores (64.68 ± 0.81) among all participants. Outpatients with poor self-rated health status had the lowest experience scores (66.14 ± 1.61) among different self-rated health status groups. While age, type of payment, and self-rated health status were significantly risk factors that influenced outpatient experience in the multiple linear regression. Thus, health-care providers should pay more attention to outpatients who are young (age <45), completely out-of-pocket and poor health status, and provide precision health care to improve outpatient experience.

Keywords
outpatient, patient satisfaction, hospitals, public, surveys and questionnaires, China

What do we already know about this topic?
Patient experience plays an important role in the improvement of health service in “patient-centered” mode, which is an important outcome of medical care and regarded as one of the central pillars of health care quality.

How does your research contribute to the field?
Our research figures out the main related factors that affected negative outpatient experience and highlights the limited research conducted on patient experience in public hospitals in China.

What are your research’s implications toward theory, practice, or policy?
Too few studies consider the risk factors of negative patient experience in China. Thus, our research provides reference to improve the outpatient experience in specific aspects for medical institutions and the concept of “patient-centered” can be truly embodied. Furthermore, improvements of outpatient experience and quality of health service contribute to the reestablishment of harmonious physician-patient relationship.
Introduction

The new health-care system reform in China commenced in 2009 and is still ongoing, one aspect of the reform in China is to emphasize on the “patient-centered” approach. There is consensus that patients are the best source of information for evaluating the care aspects of person-centeredness. Since 2008, patient satisfaction has been included as one of the evaluation indicators in hospital management by the Ministry of Health of People’s Republic of China (MOH). In 2011, MOH identified the need to improve patient experience. Hospitals have begun to shift toward patient-centered care and have paid attention to patient experience.

Patient experience is the feedback from patients on “what actually happened” in the course of receiving care or treatment, which is focused more on the details of medical process and has an “evidence-based” characteristic. Evidences have confirmed that providing a good patient experience is a key part of providing high-quality medical care. Quality does not stand still, thus it is important in striving to improve our patients’ experience. Working to improve the patient experience with health care is an increasingly relevant topic in a hospital.

Patient experience in outpatient department plays an important role in the whole patient experience. Research about patient experience has mentioned that improvement in outpatient experience is associated with the overall experience of patients for a hospital. In recent years, doctor-patient conflicts, arising in the interaction process between patients and health-care providers, have been more and more common in China. Understanding risk factors of negative outpatient experience, then making targeted strategies could lead to better patient experience, harmonious doctor-patient relationships, and the better quality of medical services.

However, identifying key factors to improve patient experience has been a slow process. Evidence demonstrates that good patient experience is associated with higher levels of adherence to recommended prevention and treatment plans, better clinical effectiveness and outcomes, better patient safety within hospitals, and lower health-care utilization. A study by Shannon found that physician dissatisfaction and burnout had negative effects on patient experience as well. Research by Singh et al showed that important factors in patient experience including the physician-patient interaction and an atmosphere that supports office staff cheerfulness, teamwork, and visit efficiency provided in a clean and friendly environment was also important to improve patient experience. Organizations are struggling to involve patients and learn from their experience, and hospital management also influenced how patient view service quality. For example, the longer the waiting time, the worse the patient experience, the cleaner the environment, the better the patient experience, and the clearer the information system, the better the patient experience in the emergency department. A study by Upton and Andrews indicated that pain level and accompanying stress also influenced patient experience. It was also reported that the lower the patients’ health literacy, the worse the patient experience. Expectation of care and self-rated health status were associated with patient experience as well.

Patient experience and associated factors may differ in different medical system. Overall patient ratings about patient experience in rural China appear lower than in higher income countries. Research on patient experience in China is concentrated on the status quo about patient experience, such as patient experience about inpatient care in rural area, patient experience about ambulatory care, relationship between patient experience and different aspects of physician services, and the use of mobile health application to improve patient experience. There are few studies on what risk factors of negative patient experience in Chinese public hospitals. Thus, it is useful to explore the risk factors of negative patient experience and provide recommendation for hospitals to improve outpatient experience.

Methods

Participants

The face-to-face survey was conducted in July 2015. Six hospitals, which represent typically different types of public hospitals in China, including 3 tertiary hospitals and 3 secondary hospitals, were randomly chosen. From each sampled hospital, 100 patients were selected by convenience sampling in outpatient department when they completed their visit, overall 600 participants were sampled. The inclusion criteria of participants were (1) aged ≥18 years, (2) visit procedures were completed, and (3) able to describe their experience. Interviewers (members of our group) did not contact with hospital staff so that the medical services participants received were not be impacted. Trained interviewers randomly selected respondents who met the inclusion criteria and explained the questionnaire to participants to improve the accuracy of participants’ descriptions of their experience. If the respondents refused to answer any question, then the questionnaire for that respondent was deleted. It took 5 or 6 minutes for a participant to complete the survey.

Measurement Tool of the Survey

Measurement tool including two parts that were created based on a review of literature, interviews with patients, and 2-round expert consultations. The final survey instrument had good reliability and validity. The first part included 5 dimensions and 26 items. The second part collected information of respondents about sex, age, marital status, type of payment, occupation, education attainment, incomes, residence type (urban/rural), and self-rated health status. Self-rated health status was measured based on the question that “how do you rate your overall health status?” Participants could choose from three options (good, moderate, and bad) according to their conditions.
Outpatient experience was assessed through five dimensions: environment and convenience (e.g., “waiting time was short”); doctor-patient communication (e.g., “health professionals explained things clearly and understandably”); health information (e.g., “you were given explanations concerning your illness”); medical cost (e.g., “charges of the visit were reasonable/ transparent/ expensive to afford”); and short-time outcome (e.g., “this visit could help you reduce or prevent your health problems”).

A 5-point Likert scale was used in the questionnaire. “5” means best experience, and “1” means worst experience. The average score of all items for a corresponding dimension was the dimension score. The total outpatient experience score was the average of all 5 dimension scores. We transformed the 5-point system into a 100-marked system (“5” = “100,” “4” = “75,” “3” = “50,” “2” = “25” “1” = “0”). The distance between a patient experience score and 100 is the gap that must be improved; therefore, the bigger the gap, the worse the patient experience.

Statistical Analyses

Descriptive analysis was conducted for respondent characteristics and the participant responses to questions about their experience. Independent-sample t-test and 1-way analysis of variance (ANOVA) were conducted to compare the experience scores among different outpatient groups. Multiple linear regression was used to determine how the factors influenced outpatient experience and to calculate different factors’ contribution to outpatient experience. In regression model, we set dummy variables for categorical independent variables. For age, we set “18 to 44” as reference category. For education, we set “primary school and below” as reference category. For average income, we set “less than 2000 Yuan” as reference category. For self-rated health, we set “good” as reference category.

All statistical analyses were performed by SPSS 19.0 (Armonk, NY: IBM Corp). The alpha level for statistical significance was set at P value lower than .05 (2-tailed).

Research Ethics and Patient Consent

The study was approved by the Ethics Committee of Tongji Medical College, Huazhong University of Science and Technology (IORG No. IORG0003571). Informed consent was obtained from all participants. To assure confidentiality, the survey was anonymous, and the questionnaire did not include any private information, such as name, phone number, and e-mail. Meanwhile, participants were informed that their responses would not be shared with the hospitals.

Results

Socio-Demographic Characteristics of Respondents

Five questionnaires were discarded because the proportion of skipped items was beyond 15% of the total number of items, and 12 questionnaires were discarded due to the answers to most items were the same. Thus, 583 eligible questionnaires (343 women, 58.83%) were remained. Most respondents were 18 to 44 years old (346/583, about 59.35%). More than half of the respondents (323/583, 55.41%) paid completely out-of-pocket. Most respondents had a high or junior school education (314/583, 53.86%), and 60.03% (350/583) of the respondents had an average income per month between 2000 and 5000 Yuan. Most respondents were from urban areas (411/583, about 70.50%). The largest proportion of the respondents rated health status as moderate (269/583, about 46.14%). About 80.45% (469/583) respondents were currently married.

Difference in Total Scores Among Variable Outpatients

There was a significant difference in overall scores for age, F(2,580) = 12.39, P < .05, type of payment, t(581) = 6.77, P < .05, residence type (urban/rural), t(581) = 2.43, P < .05, self-rated health status, F(2,580) = 17.85, P < .05, and hospital level, t(581) = 3.45, P < .05, (Table 1). Outpatients between 18 and 44 years old had lowest experience scores (65.89 ± 0.79) among the three age group. Meanwhile, the experience scores of outpatients paying completely out-of-pocket (64.68 ± 0.81) were lower than those paying partially out-of-pocket (72.72 ± 0.87). Outpatients living in rural area had lower experience scores (66.02 ± 1.07) than those living in urban area (69.20 ± 0.74). Outpatients with good self-rated health status had highest experience scores (72.63 ± 0.99) among different self-rated health status groups.

Notably, outpatients’ average experience score in tertiary hospitals was 66.17 ± 0.90, which was lower than the average experience score in secondary hospitals (70.38 ± 0.82). A t-test showed that the difference in outpatients’ average experience score between secondary hospitals and tertiary hospitals was significant, t(581) = 3.45, P < .01.

Differences in 5 Specific Dimensions Among Variable Outpatients

The scores of medical cost experience were the lowest (61.16 ± 0.86) among the 5 dimensions, whereas health information was the highest experience scores (71.37 ± 0.79) (Table 2).

For the environment and convenience dimension, there was a significant difference in age, F(2,580) = 5.22, P < .05, type of payment, t(581) = 4.20, P < .05, residence type (urban/rural), t(581) = 2.28, P < .05, and self-rated health status, F(2,580) = 7.06, P < .05. Age, F(2,580) = 16.62, P < .05, type of payment, t(581) = 6.61, P < .05, and self-rated health status, F(2,580) = 12.71, P < .05, were significantly different in doctor-patient communication dimension. There was a significant difference in age, F(2,580) = 7.81, P < .05, type of payment, t(581) = 6.40, P < .05, and self-rated health status, F(2,580) = 15.95, p < .05, in different health information dimension. In medical cost dimension, difference was in age,
we set the first categorical indicator as the reference. For age, compared to patients who were between 18 and 44 years old, patients who above the age of 65 had better experience ($F_{(2,580)} = 3.05, P < .05$). For self-rated health status, compared to patients who rated health status as “good,” patients who rated health status as “bad” had decreased patient experience ($t_{(581)} = 4.580, P < .000$), when other covariates were held constant, patients who paid medical cost partially out-of-pocket had better experience. We calculated the variance inflation factor to test the collinearity problem. The variance inflation factor was $<10$ (1.200-1.421), which meant that there was no collinearity problem. The coefficient of determination for this model was 0.394, showing that those factors (age, type of payment, and self-rated health status) explained 39.40% of the variance in outpatient experience scores.

### Factors That Influenced the Outpatient Experience

According to the regression analysis, age, type of payment, and self-rated health status significantly ($P < .05$) influenced outpatient experience (Table 3). In the multiple regression model, age and self-rated health status were categorical variables, so
Table 2. Differences of Experience in 5 Dimensions.

| Characteristic                              | Environment and convenience (66.09 ± 0.66) | Doctor-patient communication (67.93 ± 0.68) | Health information (71.37 ± 0.79) | Medical cost (61.16 ± 0.86) | Short-time outcome (68.25 ± 0.82) |
|--------------------------------------------|-------------------------------------------|--------------------------------------------|---------------------------------|----------------------------|---------------------------------|
| Sex                                        |                                            |                                            |                                 |                            |                                 |
| Male                                       | 65.57 ± 0.97                             | 66.23 ± 0.98                              | 70.70 ± 1.19                    | 59.65 ± 1.33               | 68.62 ± 1.27                   |
| Female                                     | 66.46 ± 0.90                             | 69.12 ± 0.92                              | 71.83 ± 1.08                    | 62.22 ± 1.12               | 69.24 ± 1.06                   |
| Age                                        |                                            |                                            |                                 |                            |                                 |
| 18-44                                      | 64.49 ± 0.85                             | 64.92 ± 0.86                              | 68.82 ± 1.06                    | 59.44 ± 1.08               | 67.63 ± 1.06                   |
| 45-65                                      | 67.68 ± 1.23                             | 71.29 ± 0.19                              | 74.65 ± 1.34                    | 62.38 ± 1.60               | 69.75 ± 1.45                   |
| Above 65                                   | 70.91 ± 1.98                             | 75.62 ± 2.05                              | 76.53 ± 2.52                    | 67.86 ± 2.69               | 72.77 ± 2.67                   |
| Type of payment                            |                                            |                                            |                                 |                            |                                 |
| Completely out-of-pocket                   | 63.62 ± 0.87                             | 64.05 ± 0.89                              | 66.93 ± 1.11                    | 64.0*                      | 65.40 ± 1.1                    |
| Partially out-of-pocket                    | 69.17 ± 0.99                             | 72.74 ± 0.97                              | 76.88 ± 1.05                    | 65.83 ± 1.28               | 71.78 ± 1.19                   |
| Education                                  |                                            |                                            |                                 |                            |                                 |
| College and above                          | 67.14 ± 1.15                             | 67.93 ± 1.19                              | 72.00 ± 1.30                    | 63.59 ± 1.41               | 69.25 ± 1.34                   |
| High/junior school                         | 65.43 ± 0.87                             | 67.45 ± 0.93                              | 70.68 ± 1.13                    | 59.47 ± 1.19               | 67.64 ± 1.15                   |
| Primary school and below                   | 65.88 ± 2.15                             | 70.53 ± 1.61                              | 72.78 ± 2.17                    | 61.49 ± 2.38               | 67.89 ± 2.24                   |
| Average incomes per month                  |                                            |                                            |                                 |                            |                                 |
| Below 2000                                 | 64.75 ± 1.22                             | 68.51 ± 1.18                              | 71.32 ± 1.41                    | 58.04 ± 1.55               | 66.03 ± 1.55                   |
| 2000-5000                                  | 66.49 ± 0.85                             | 67.89 ± 0.88                              | 71.37 ± 1.05                    | 61.81 ± 1.1                | 68.54 ± 1.03                   |
| Above 5000                                 | 67.53 ± 2.18                             | 66.57 ± 2.31                              | 71.48 ± 2.55                    | 60.61 ± 2.72               | 72.62 ± 2.64                   |
| Residence type                             |                                            |                                            |                                 |                            |                                 |
| Urban area                                 | 67.05 ± 0.8                             | 68.72 ± 0.81                              | 71.98 ± 0.96                    | 63.16 ± 1.02               | 69.13 ± 0.98                   |
| Rural area                                 | 63.81 ± 1.18                             | 66.03 ± 1.22                              | 69.89 ± 1.43                    | 56.40 ± 1.51               | 66.13 ± 1.48                   |
| Self-rated health status                   |                                            |                                            |                                 |                            |                                 |
| Good                                       | 69.03 ± 1.07                             | 71.89 ± 1.12                              | 76.76 ± 1.22                    | 66.74 ± 1.36               | 73.98 ± 1.28                   |
| Moderate                                   | 63.71 ± 0.94                             | 64.65 ± 0.94                              | 67.66 ± 1.14                    | 57.99 ± 1.20               | 64.96 ± 1.08                   |
| Bad                                        | 65.59 ± 1.71                             | 67.40 ± 1.74                              | 68.17 ± 2.20                    | 55.66 ± 2.28               | 62.65 ± 2.53                   |
| Marital status                             |                                            |                                            |                                 |                            |                                 |
| Currently married                          | 65.58 ± 0.76                             | 67.87 ± 0.76                              | 71.09 ± 0.91                    | 60.82 ± 0.97               | 68.58 ± 0.91                   |
| Currently not married                      | 68.20 ± 1.28                             | 68.18 ± 1.52                              | 72.52 ± 1.69                    | 62.57 ± 1.78               | 66.89 ± 1.86                   |

Note. t/F: respectively represent the result of t-test and analysis of variance (ANOVA).
*P < .05.

Table 3. Factors Influencing the Outpatient Experience.

| Independent variable          | Standardized coefficient β | t-test (df) | P value | Variance inflation factor |
|------------------------------|----------------------------|-------------|---------|--------------------------|
| Age (1)                      | 0.138                      | 3.169 (581) | .002*   | 1.278                    |
| Age (2)                      | 0.182                      | 3.966 (581) | .000*   | 1.421                    |
| Self-rated health status (1) | −0.185                    | −4.191 (581) | .000*   | 1.316                    |
| Self-rated health status (2) | −0.224                    | −5.315 (581) | .000*   | 1.201                    |
| Type of payment              | 0.193                      | 4.580 (581) | .000*   | 1.200                    |

*P < .05.

Discussion

Patient experience reflects the direct feelings and experiences of the patients when they received the medical service. By studying the risk factors of negative outpatient experience, the service quality of public hospitals can be improved and the concept of a “patient-centered” approach can be truly implemented. Furthermore, improvements of outpatient experience and quality of health service contribute to the reestablishment of a harmonious doctor-patient relationship.

It is shown in our study that age and self-rated health status were risk factors that have effects on outpatient experience. Similar conclusions were reported by Hall and Dornan. Our research indicates that the younger respondents (below 44 years old) have lower experience scores than other age groups, which is similar to Rahmqvist and other scholars’ results. This might be due to the lack of experience of health organization or unrealistic expectations of health service. With increased age, individual’s tolerance is also improved, and they lower their expectation of health services. Thus, a little improvement to the service quality would improve the older experience. This difference may also be explained by older individuals receiving more respect and attention from the doctors when they visited doctors because of their age.
The analysis indicates that outpatients with poor self-rated health status have worse experience than those with good self-rated health status, similar with studies by Xiao and Barber\textsuperscript{34} and Bjertnaes et al.\textsuperscript{35} Outpatients with good self-rated health status have lower expectations than those with poor self-rated health status. Thus, the gap between reality and expectation resulted in different experience. SERVQUAL\textsuperscript{36} (Service Quality theory) is designed to capture consumer expectations and perceptions of a service. Thus, the relationship could be explained by the “SERVQUAL” theory. Meanwhile, outpatients with poor self-rated health status are more prone to be discomfort, anxiety, fear or have other negative emotions when they visit hospitals,\textsuperscript{33} resulting in lower experience scores than outpatients with good self-rated health status when they receive the same health service.

High expenditure for patients in health care is a social problem in China. In our study, the experience of medical cost has the lowest scores among the 5 dimensions. High medical cost results in financial burden for patients and their families.\textsuperscript{37} Moreover, the medical cost for outpatient service is rarely reimbursed although most outpatients enrolled in health insurance.\textsuperscript{38} Health insurance coverage exceeds 95.00% in China, but the reimbursement rate is still limited.\textsuperscript{39} Our result shows a significant association between type of payment and outpatient experience. The analysis shows that outpatients who pay partially out-of-pocket has better experience than those paying out-of-pocket completely. When patients receive health service, insurance can lower the out-of-pocket cost of health care, which can alleviate their financial burden.\textsuperscript{40} In our study, most outpatients still pay the fully medical cost out-of their own pocket. This financial burden influenced the outpatient experience. Therefore, alleviating the financial burden could play an important role in enhancing the outpatient experience.\textsuperscript{41}

Although the secondary hospitals have less resources over the tertiary hospitals in diagnosis and treatment,\textsuperscript{42} we find that the outpatients in secondary hospitals have higher experience scores than the outpatients in tertiary hospitals. With the increasing demands of high-quality medical service, more outpatients tend to choose top-level hospitals as their primary health-care providers. Doctors, especially the specialists, have to restrict their communication time to meet patients’ demands, which results in worse experience about the communication and attitude of the medical staffs in top-level hospitals. In addition, patients’ health condition in outpatient departments between tertiary and secondary hospitals are different, which can also affect the experience scores.

In order to improve the outpatient experience, the public hospitals should pay attention to these risk factors and focus on the demands of the outpatients. The primary focus of public hospitals and health administration should be as follows: first, patients who are the younger, poor self-rated health status and paying medical cost completely out-of-pocket tend to have negative patient experience. Then, paying attention to the risk factors of negative patient experience, and providing targeted and individualized treatment. Second, the government should strengthen the supervision of the medical costs, optimized the compensation mechanism of hospitals. Third, there is a need to improve the health insurance system to alleviate the patients’ financial burden. Finally, hospitals should optimize the referral system to establish a reasonable patient flow.

Limitation

Our study is an early study investigating the risk factors of outpatient experience. However, there were several limitations. First, sample was from public hospitals in Hubei province and the sample method was convenience sampling, the generalizability might still be limited. Second, as the information was collected from a self-reported questionnaire, the response bias was unavoidable. Finally, we did not take confounding factors such as patient’s actual physical health condition, hospital level, disease severity, and first visit or follow-up visit into consideration, which may be an area for further exploration in future research. Therefore, more research is still needed to confirm and expand on these findings in a large scale.

Conclusion

The risk factors of negative patient experience were age, type of payment, and self-rated health status. These findings remind health-care providers to pay more attention to outpatients who are young (age < 45), completely out-of-pocket and poor health status, and provide precision health care to improve outpatient experience. Outpatients had poorer experience with respect to medical costs, thus, health administration should address to patients’ concern about their medical payment.

Declaration of Conflicting Interests

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References

1. Yip WC, Hsiao WC, Chen W, Hu S, Ma J, Maynard A. Early appraisal of China’s huge and complex health-care reforms. Lancet. 2012;379:833-842.
2. Levesque JF, Pineault R, Haggerty JL, et al. Respectfulness from the patient perspective: comparison of primary healthcare evaluation instruments. Healthc Policy. 2011;7:167-179.
23. Hu G, Liu L, Chen Y, Liu Y. Association between consultation length and patient experience of ambulatory care in China: a cross-sectional study. *Lancet*. 2018;392:S68.

24. Bao Y, Fan G, Zou D, Wang T, Xue D. Patient experience with outpatient encounters at public hospitals in Shanghai: examining different aspects of physician services and implications of overcrowding. *PLoS ONE*. 2017;12(2):e0171684.

25. Lu C, Hu Y, Xie J, et al. The use of mobile health applications to improve patient experience: cross-sectional study in Chinese public hospitals. *JMR Mhealth Uealth*. 2018;6(5):e126.

26. Sim J, Wright C. Research in Health Care: Concepts, Designs and Methods. Cheltenham, United Kingdom: Nelson Thornes; 2000.

27. 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*. 2016;29(1):40-46.

28. Browne K, Roseman D, Shaller D, Edgman-Levitan S. Measuring patient experience as a strategy for improving primary care. *Health Aff*. 2010;29(5):921-925.

29. Hall JA, Dornan MC. Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis. *Soc Sci Med*. 1990;30:811-818.

30. Rahmqvist M. Patient satisfaction in relation to age, health status and other background factors: a model for comparisons of care units. *Int J Qual Health Care*. 2001;13(5):385-390.

31. Young GJ, Meterko M, Desai KR. Patient satisfaction in relation to age, health status and other background factors: a model for comparisons of care units. *Int J Qual Health Care*. 2001;13(5):385-390.

32. Deborah C, Yoko I, Louise B. The impact of demographics on patient satisfaction. *Value Health*. 2008;11(4):719-725.

33. Bjertnæes O, Sjetne J, Iversen H. Overall patient satisfaction with hospitals: effects of patient-reported experiences and fulfillment of expectations. *BMJ Qual Saf*. 2012;21(1):39-46.

34. Parasaruman A, Zeithaml VA, Berry LL. A conceptual model of service quality and its implications for future research. *J Mark*. 1985;49(4):41-50.

35. Yan P. Study on medical expenditure burden of older people in China. *Sociology Study*. 2011;7(1):504-514.

36. Meng Q, Fang H, Liu X, Yuan B, Xu J. Consolidating the social health insurance schemes in China: towards an equitable and efficient health system. *Lancet*. 2015;386(992):1484-1492.

37. Fu R, Wang Y, Bao H, et al. Trend of urban-rural disparities in hospital admission and medical expenditure in China. *PLoS ONE*. 2014;9(9):e108571.

38. Liu D. *China’s New Rural Cooperation Medical Scheme: Evolution, Design and Impact*. New York, NY: PL Academic Research; 2013.

39. Pan J, Liu D, Ali S. Patient dissatisfaction in China: what matters. *Soc Sci Med*. 2015;143:145-153.

40. Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*. 2013;3(1):57-60.