

# Validation of a Measure of Chinese Outpatients' Satisfaction in the Taiwan Setting

INQUIRY: The Journal of Health Care Organization, Provision, and Financing  
Volume 54: 1–8  
© The Author(s) 2017  
Reprints and permissions:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0046958016688979  
journals.sagepub.com/home/inq  


James O. Stanworth, DPhil<sup>1</sup>, Ryan Shuwei Hsu, PhD<sup>2</sup>, and Clyde A. Warden, PhD<sup>3</sup>

## Abstract

The medical services market is rapidly expanding around the world, following the experience of the industrialized Western economies. Cultural differences make existing assumptions about health care quality risky to export, leading to an increasing interest in understanding patient satisfaction with care within non-Western contexts. Within the Greater China region, both Western and traditional Chinese medicine coexist, yet there is a lack of research instruments that include distinct values of Chinese patients. This article reports the development of a measure of Chinese patient satisfaction with outpatient care. We describe the foundation of the scale in a qualitative report that includes 8 dimensions of Chinese patient satisfaction. A sample of 400 Chinese patients completed the final instrument. A quantitative analytical procedure leads to a 6-dimension and 27-item instrument to measure Chinese patients' satisfaction with outpatient care. Our proposed instrument has good internal consistency supporting the use of the instrument in contexts where Chinese patients are being treated.

## Keywords

patient satisfaction, Chinese, outpatients, factor analysis, scale development

## Introduction

Mature health care delivery systems have developed a focus on integrating the patient's voice into policy and practice, with improvements in consumer satisfaction and compliance.<sup>1,2</sup> This consumer movement has spread around the globe,<sup>1</sup> with patients playing key roles in health care decisions, delivery, and assessment. However, in recently developed and developing economies, patient's voice may differ in its value system, questioning global assumptions of how to integrate consumers. The Greater China region fits this narrative, with little existing research attention that contextualizes or describes what local consumers consider in their judgment of health care service satisfaction.

In both Taiwan and China, health care is undergoing significant reforms. In China, a developing country, the focus is on improving access to quality care. Taiwan, a recently developed economy, is implementing a single-payer system—the National Health Service.<sup>3</sup> Traditional Chinese medicine (TCM) is included in the Taiwan service, showing how local cultural values can play a role in consumer expectations of what form medical care takes. Although hospitals around the world have taken on a standardized look and feel, they are far from interchangeable in what patients expect and judge when it comes to satisfaction.

In the United States, patient satisfaction measures are now often included in hospital assessments. Hospital financing is, as a result, often directly tied to performance on satisfaction

metrics.<sup>2</sup> Effectiveness of pay for performance schemes relies on the accuracy of the underlying satisfaction metrics.<sup>4</sup> Recent studies in Taiwan link performance in care provision to outcomes in treatment of diabetes.<sup>5</sup> Taiwan, like other developed economies, is experiencing growth in health care tourism. The Government instituted a specific visa for Chinese mainland nationals which facilitated the growth of medical tourists from 1000 (2011)<sup>6</sup> to 60504 (2015).<sup>7</sup> Accurate satisfaction measures are key to this market segment's continued growth.

While satisfaction leads to marketing opportunities, there is also a medical benefit. The literature shows that patient satisfaction is linked to improved health outcomes.<sup>8,9</sup> Quite simply, patients who are satisfied with their health care interactions are more likely to comply with prescribed treatment plans. This directly links consumer satisfaction with health care outcomes in quite a different way than the normal marketing satisfaction context—mostly focused on developing lifetime customer value. The positive relationship between

<sup>1</sup>National Changhua University of Education, Taiwan

<sup>2</sup>National Taiwan Normal University, Taipei, Taiwan

<sup>3</sup>National Chung Hsing University, Taichung, Taiwan

Received 30 August 2016; revised 13 November 2016; accepted 26 November 2016

## Corresponding Author:

Ryan Shuwei Hsu, National Taiwan Normal University, No. 134, Sec. 2, Heping E. Road, Da-an District, Taipei City 106, Taiwan.  
Email: ryanswhsu@ntnu.edu.tw



patient-provider interactions and compliance with treatment regimens is well documented.<sup>10</sup> Satisfied patients are more willing to refer others to a particular provider for health care treatment, aligning with the marketing concept of word of mouth. This benefit also helps in improving medical care in general, as more people become aware of treatment options.<sup>8,11,12</sup> Thus, the health care industry benefits from a better understanding of customer satisfaction while the professional ethical goals of the stakeholders are also met through improved health care outcomes.

Patient satisfaction is a multidimensional concept that is not yet well understood.<sup>9</sup> The majority of existing studies place health care satisfaction within the specific frame of clinical interaction—communications between the health care provider and patient.<sup>8</sup> A range of theories explain these interactions—mostly assuming satisfaction is a question of personal preference and expectation.<sup>11</sup> This line of research describes patients as subjectively evaluating their received care against a series of dimensions or attitudinal dimensions.<sup>8,13</sup> Dimensions generally reflect a patient's ability to evaluate nontechnical aspects of the interaction with the health care provider. Such expectations can be culturally specific.

Expectations surrounding health care and the patient/provider relationship vary widely across cultures.<sup>14,15</sup> Current measures of patient satisfaction largely emanate from the Western health care world, reflecting an emphasis on distinct constructs that reflect the values and norms of that cultural context.<sup>16</sup> Differences in values across cultures, ie, cultural distance, undermine the validity standardized health care satisfaction measures.<sup>15</sup> The needs and expectations of patients outside of a Western context are of major importance, but have been largely overlooked in the literature. Globalization and immigration have led to an increasing interest in explaining patient satisfaction in non-Western contexts.<sup>17-19</sup> In many cases, local medical treatment traditions can greatly change consumer perspective, even when the health care sought is Western medicine-based. A good example of this is the Chinese cultural setting, where a long history of TCM exists and is currently administered in parallel to Western medical treatments.

Patients in China, for the year 2013, made over 861 million visits to large hospitals.<sup>20</sup> In Taiwan, with a more developed Western medicine hospital-based system, there were more than 350 million yearly recorded patient visits to the national health service.<sup>21</sup> We currently lack a measure of customer satisfaction that accounts for the needs and expectations of these culturally Chinese<sup>22</sup> patients toward their outpatient care or even an understanding of how Chinese culture shapes patient understanding of health care service.

For example, Chinese patients strongly associate Western medical practice with an efficient path to quickly alleviating symptoms, while believing TCM is a distinct approach that treats underlying causes. These patients tend to have shorter consultation times in the Western medical context while

being less involved when compared with their American counterparts.<sup>15</sup> In this article, we report the development and testing of a measure of Chinese patient satisfaction with outpatient (ie, those not formally admitted) hospital care that takes into account unique cultural values.

Beginning with an inductive approach, we examine qualitative reports of the factors that determine Chinese health care patient satisfaction. Qualitative studies are high in ecological validity, providing a foundation on which to develop a measure of satisfaction.<sup>23</sup> Such reports are rare as the majority of studies using a Chinese cultural research sample frame simply adopt Western measures of satisfaction in a deductive approach.

Wong et al<sup>16</sup> report a qualitative study that they use to develop a measure of patient satisfaction, resulting in 2 subscales. The first subscale measures the care provided by doctors, while the second subscale relates to the care provided by nurses. The indicators of these scales reflect a heavy emphasis on personal interaction (eg, the care, friendliness, and attitude of the doctor). This finding shows some of the emphasis in service evaluation that is important within the specific frame of Chinese patients. This existing research has a number of weaknesses. First, there is no clear report of the dimensions that determine Chinese patients' satisfaction. Second, the process by which the qualitatively derived dimensions translate into survey questions is obscure and unclear. Third, the survey items lack reference to local norms and beliefs, leaving out much of the rich context. Within the survey, general and vague phrasing is used, creating confusion over meanings, especially across cultures.<sup>24</sup> Along the same lines, but more emic in emphasis, Stanworth et al<sup>25</sup> report a qualitative study of Chinese in-patient satisfaction. The data are derived from patient reports of satisfaction, ie, complaints and compliments in a large district general hospital in central Taiwan. The data, drawn from a 5-year period, were over 105 000 transcribed words providing a strong basis for category development.<sup>26</sup> Analysis of these data leads to 8 dimensions of Chinese patients' satisfaction (see Table 1).

The current study overcomes a number of the limitations in the Wong et al<sup>16</sup> approach. The current derived set of dimensions, of Chinese patient satisfaction (Table 1), has a clear and explicit emic grounding in patient experience. The dimensions and their meanings are anchored within the Chinese cultural context of personal values and interaction norms.<sup>25</sup> What is particularly notable is the introduction of the culturally specific value *chin-chieh*, an indigenous term.

The notion of *chin-chieh* concerns, “. . .customers' feelings of warmth, familiarity, and closeness with the service provider. With overtones directed toward deepening relationship this suggests the possibilities of more than just pleasant or passing friendliness.”<sup>27</sup> This distinguishes it from formulaic notions of friendliness, courtesy, and expressions of concern found in Western measures.<sup>13</sup> *Chin-chieh* is important to interactions as it helps maintain the core Chinese value of

**Table 1.** Chinese Patients' Determinants of Satisfaction.

Dimensions	Description
Professionalism	Impressions of the speed to which the exercises of clinical skills are directed toward alleviating symptoms
Chin-chieh	The extent to which interactions are warm, pleasant, and easy
Patience	The degree to which the clinician demonstrates interest, and attention to treatment
Efficiency	The degree to which treatment processes cause the minimum interruption to everyday life
Respect	Displays of humanity in interaction and in responding to requests
Responsibility	The extent to which clinical staff show their abilities in attention to detail and dedication
Fairness	The degree to which payment is equitable
Ethics	The level of adherence to social norms about gift giving

harmony.<sup>28</sup> (This is not to say friendly interactions are the preserve of Chinese people. Western interpretations of friendliness, though, are often formulaic [eg, the server smiled] and compartmentalized to specific interactions [eg, my interaction with the server this time was friendly]. Chinese people, by contrast, interpret friendliness to the person [eg, their manner is friendly] and within the context of relationships [eg, it is easy to interact, share and to become more familiar, ie, close, with each other]. These points rest on a substantial literature in the psychology of the Chinese.) Scales to measure Chinese customers' evaluation of customer service quality also integrate chin-chieh.<sup>27,29</sup> No previous Western-based sample reflects a similar variable, meaning chin-chieh is possibly unique, or at least very important, to Chinese cultural settings.

The aim of this study is to examine the emic dimensions reported by Stanworth et al<sup>25</sup> in order to arrive at a parsimonious measure of Chinese outpatients' satisfaction.

## Scale Development

We closely follow general principles of scale development<sup>30</sup> while being informed by prior approaches used in the health care and marketing contexts.<sup>16,31</sup> The Chinese patients' satisfaction scale (C-PSS) development follows 3 stages, described next.

### Step 1: Developing Scale Items

Qualitative data collection by Stanworth et al<sup>25</sup> on Chinese patient satisfaction is the starting point we adopt. One of the authors (R.S.H.), familiar with the qualitative data in Stanworth et al, draws on the nuances of these data, resulting

in 56 items, falling into the 8 general categories seen in Table 1. These, on average, 7 items per category, are thus the measure of patient service satisfaction (C-PSS) to be tested. Each item is accompanied by a 5-point scale that ranges from strongly disagree (1) to strongly agree (5). Responses with a higher score normally represent greater satisfaction.

### Step 2: Evaluating Content Validity

Construct validity of the instrument increases by evaluating the content validity of the items used.<sup>32</sup> This is an important step in developing a high-quality measure.<sup>33</sup> We follow Polit, Beck, and Owen's<sup>34</sup> established procedure with each expert asked to evaluate each statement on 4 dimensions—importance, relevance, clarity, and degree of difficulty. Each statement is scored on a 4-point scale that aligns with purpose of the evaluation, eg, for the first dimension, very important (4) to very unimportant (1). More than 3, but less than 10, experts are required.<sup>34</sup> Our 7 experts (a scholar in service quality, 2 hospital superintendents, 2 patients, and 2 outpatient department nurses) review and score the items in the instrument. Items with a score less than 0.78 should be removed.<sup>35</sup> Following this process, we remove 14 items (ie, 2 to 3 per dimension) and adjust phrasing of the remaining items.

Face validity of the instrument is carried out through a pilot test with 30 patients. Further minor changes to the wording of the items and instructions follow the pilot test results. At the end of this step, as the basis for refinement of our scale, 42 items remain, representing 8 dimensions of patient satisfaction.

### Step 3: Data Collection and Scale Purification

**Data collection.** A large sample size generally helps to alleviate the potential for results to reveal sample specific traits.<sup>36</sup> Generally, 150 observations are considered sufficient to arrive at an accurate solution in exploratory factor analysis (EFA). Confirmatory factor analysis (CFA), in contrast, is best undertaken with a minimum sample size.<sup>36</sup> For the current research, we set the minimum sample size to 350 respondents.

For the current study, we recruit outpatients from a hospital in Northern Taiwan. This public hospital, located in Taiwan's most populous county, has 5 outpatient departments that account for 40% of the hospital's revenue. Patient service responsibility spans a range of departments—a normal situation in Taiwan district general hospitals.

Respondents come from 4 of the 5 hospital outpatient departments. A recently retired nurse from the hospital supervises a group of assistants to facilitate data collection. Survey administration assistants include nurses in the outpatient departments, assistants to physicians, or department volunteers. Assistants systematically approached patients as they arrived in the hospital department to gain consent to

**Table 2.** The Characteristics of Respondents.

Characteristic	No. (%) of patients
Sex	
Male	246 (61.8)
Female	152 (38.2)
Age, years	
Above 50	223 (56.5)
Below 50	172 (43.5)
Marital status	
Married	320 (80.4)
Unmarried	57 (14.3)
Other	21 (5.3)
Illness type	
Chronic	253 (63.7)
Acute	144 (36.3)
Education	
Junior high or less	178 (44.5)
Senior high	113 (28.3)
Vocational college	47 (11.8)
Undergraduate	58 (14.5)
Graduate	4 (1.0)
Division	
Internal medicine	209 (52.4)
Surgery	49 (12.3)
Ophthalmology	49 (12.3)
Physical therapy	21 (5.3)
ENT	17 (4.3)
Psychology	17 (4.3)
Family practice	13 (3.3)
Others	24 (6.0)
Chinese medicine use	
Yes	313 (78.4)
No	86 (21.6)
Reasons for Western medicine use	
Effective	248 (62.6)
Convenient	80 (20.2)
Other	68 (17.2)

participate in the study. Responses are collected on different days and times according to the availability of outpatient clinics in the 4 departments. The survey assistants check questionnaire completeness while helping respondents with any questions about the survey. The questionnaire is self-administered, with assistance as needed—such as elderly respondents unable to easily read the printed forms.

Twenty questionnaires are removed, due to incompleteness, leaving 400 valid responses. Over half the patient respondents are above 50 years old, with slightly more male (61.8%) and with the majority married (80.4%). The largest proportion of respondents are attached to internal medicine (52.4%), surgery (12.3%), and ophthalmology (12.3%). The majority of respondents are receiving treatment for chronic (63.7%) rather than acute (36.3%) conditions. Most of the sample has a limited education (ie, junior high or less; 44.5%) (see Table 2).

To facilitate our data analysis and refinement of our scale of Chinese patient satisfaction, we randomly split our sample in half. The first half is used for our first stage of scale purification, while the second half serves to further evaluate the psychometric properties of our C-PSS scale. All analysis is conducted with the use of statistical software (SPSS).<sup>37</sup>

**Scale purification—first stage.** The aim of the first stage of data analysis is to examine whether the dimensions proposed in Stanworth et al<sup>25</sup> exist in the survey data. We apply an EFA (maximum likelihood method) with a promax rotation (Table 3). Valid items load on their respective dimensions with a coefficient above 0.5.<sup>38</sup> This result gives us 6, out of the original 8, distinct dimensions (see Table 3).

Items relating to both patience and ethics are either cross-loading or under the threshold for validity. Therefore, we remove the 15 items, related to these 2 dimensions, from further analysis. At the end of the EFA process, we are left with 6 dimensions represented by 27 items.

**Scale purification—second stage.** The second stage of data analysis tests the robustness of our proposed 6-dimension Chinese patient satisfaction structure. CFA is constrained to a 6-factor structure—the 6 factors from the first stage. Results confirm the 6-factor structure (comparative fit index = 0.92; incremental fit index = 0.92; normed fit index = 0.87; root mean square error of approximation = 0.08). The Cronbach alpha for each dimension falls within a range from 0.93 to 0.96, indicating this scale has high internal consistency (see Table 3). All other items load on their expected dimensions, representing good scale reliability.<sup>38</sup> This 6-factor structure also aligns with our predictions, showing good construct validity. (Appendix shows the dimensions and items representing C-PSS.)

## Discussion

We propose a measure of Chinese patients' satisfaction as 6 dimensions represented through 27 items. Our quantitative analysis, based on sample frame of Chinese outpatients, demonstrates our C-PSS has good internal consistency. Results indicate the measure is a sound basis for evaluating satisfaction with outpatient care within a Chinese cultural setting. The dimensions in our scale focus on satisfaction with doctor-patient interaction, ie, a clinical orientation, which is consistent with previous studies.<sup>8</sup> The parsimonious structure of C-PSS provides a sound basis for measuring outpatient satisfaction in settings that serve Chinese patients.

It is assumed that health, health care, and patient satisfaction are culturally construed.<sup>14,15</sup> These differences are often significant, particularly as concerns distant cultures, such as those found in Western and Chinese cultural worlds. As the predominance of measures align with the values and norms of Western patients,<sup>16</sup> this motivates as need for alternatives that align the assumptions of patients in non-Western contexts. We are among the first to propose a scale to measure patient



**Table 3.** EFA and CFA Results.

Dimension	Item No.	Factor loading (EFA) N = 200	Unstandardized coefficient (CFA) N = 200	Cronbach $\alpha$ N = 400
Efficiency	20	0.928	0.87	0.93
	18	0.863	0.79	
	19	0.840	0.91	
	21	0.778	0.89	
	17	0.54	0.89	
Fairness	37	0.98	0.97	0.95
	36	0.94	0.89	
	38	0.78	0.95	
	35	0.67	0.79	
	10	0.97	0.96	
Chin-chieh	6	0.89	0.92	0.94
	8	0.87	0.94	
	9	0.65	0.93	
	7	0.51	0.63	
	4	0.91	0.94	
Professionalism	3	0.87	0.93	0.96
	5	0.78	0.93	
	1	0.75	0.90	
	2		Discarded	
	32	0.91	0.90	
Responsibility	33	0.82	0.93	0.94
	30	0.77	0.83	
	29	0.71	0.85	
	34	0.61	0.89	
	31		Discarded	
Respect	27	0.91	0.93	0.93
	26	0.75	0.90	
	25	0.65	0.79	
	28	0.62	0.89	
	22		Discarded	
Patience	23		Discarded	Not applicable
	24		Discarded	
	11		Discarded	
	12		Discarded	
	13		Discarded	
Ethics	14		Discarded	Not applicable
	15		Discarded	
	16		Discarded	
	39		Discarded	
	40		Discarded	
	41		Discarded	
	42		Discarded	

CFA= Confirmatory Factor Analysis; EFA= Exploratory Factor Analysis.

satisfaction in contexts outside the Western world and specifically for Chinese patients.

Our approach to scale development firmly anchors it in assumptions and meanings Chinese patients hold about satisfaction. Our claim to high ecological validity is made based on that our scale dimensions are directly and naturalistically derived from the the meanings patients hold in their minds

about patient satisfaction (ie, the qualitative study that Stanworth et al<sup>25</sup> report.)

Although our approach aligns with the aspiration of Wong et al<sup>16</sup> to develop a Chinese patient satisfaction scale, our results are distinct. We believe this contributes to an emerging discourse on how patient-centered care is understood and measured in non-Western setting.<sup>40</sup> Our C-PSS integrates terminology-in-use that patients use to articulate their Chinese values toward hospital care.

The indigenous notion of chin-chieh is reflected in 5 items within our scale. The results indicate that chin-chieh is a significant aspect of Chinese doctor-patient interactions. Our definition of chin-chieh aligns with reports in service research, ie, as, “intimate/cordial/warm politeness”<sup>41</sup> or “feelings of warmth, familiarity and closeness.”<sup>27</sup> We suspect, consequently, that chin-chieh is a generic interactive norm with relevance to all forms of service encounters.

Our measure also reflects specific preferences for the way medical interactions occur. The items reflecting the dimensions of respect, professionalism, fairness, efficiency, and responsibility all capture specific preferences for interactions with the doctor that are quick and well organized (see Table 2 and Appendix). As this aligns with the values that Chinese people hold toward Western medical treatment,<sup>15</sup> it gives further support to the construct validity of our scale. The explicit integration of underlying indigenous values seems overlooked within the work of Wong et al.<sup>16</sup> Overall, our scale reflects Chinese patients cognitively relating satisfaction to harmonious and pleasant interaction in the context of rapid treatment delivery.

For managers, our measure supports the emerging orientation in health care toward a closer relationship between funding and performance. While few debate the notion that patient satisfaction is culturally construed, we currently lack measures that reflect local norms and values of patients. This gap has left managers with little recourse but to draw on satisfaction measures designed for Western cultural assumptions.<sup>17,18,42</sup> Our C-PSS overcomes this limitation by providing a measure of patient satisfaction that fits the Chinese context generally and the specifics of the health care market in Taiwan. Our measure is parsimonious and thus readily administered by managers within hospital settings. This enables managers to accurately report an aspect of performance that is increasingly associating with funding.<sup>2</sup>

Patient satisfaction measures have been critiqued for their lack a theoretical foundation.<sup>8</sup> Research into service within the businesses context has avoided this difficulty by adapting existing measures to specific contexts.<sup>43</sup> We argue that by drawing on this lesson, C-PSS is best understood and used as a basic framework of dimensions and items that can be adapted to suit a hospital’s particular circumstances and culture milieu.

## Conclusions

In summary, our results show 6 dimensions of outpatient satisfaction, measured through 27 items, in a Chinese cultural setting. Our analysis demonstrates this measure has good

validity and reliability in representing the construct of Chinese doctor-patient interaction. Our parsimonious measure provides a useful way to understand and evaluate service delivery of Chinese outpatient care. Some limitations in our study invite further research.

Surprisingly, the dimensions of patience and ethics were not validated in this sample. Patients appear to hold an ambivalent attitude toward these aspects of their care. These items relate to a focus on doctors taking the time to provide explanations about medical conditions. Some patients may desire some information while the majority settle for minimal discourse about their illness and its treatment options.<sup>15,44</sup> Items relating to ethics, in this sample, describe a focus on gift giving. This type of behavior varies considerably across respondents, as appropriateness is personally construed.<sup>45</sup> Overall, this points to significant psychometric variations in how items relating to the dimensions of patience and ethics are understood by respondents. Further research can determine the reliability of the current findings regarding patience and ethics.

The current findings draw from a sample frame of patients mostly above 50 years old and with chronic conditions. Future studies can examine variations of service values

across younger age groups and medical conditions. In particular, it will be useful to examine the relevance of the dimensions of patience and ethics across demographics.

Our measure focuses on doctor-patient interactions. These interactions are significant but are complimented by interactions with other medical staff, eg, nurses and the hospital environment. Further research can examine the role of these interactions,<sup>8</sup> forming part of a broader construct of Chinese-specific satisfaction within the health care industry. Research to explore the relationship between C-PSS, reported here, and related constructs can examine how the current scale predicts, eg, patient willingness to refer others to the hospital.

It is rare to find measures of patient satisfaction for cultures outside of a Western context. Distinct differences between cultures inform substantial variations in how health care is understood by consumers. Our measure is among the first to provide a substantive measure of Chinese patients' satisfaction with their health care. This study underlines the need for more of these types of emic indigenous measures that can accurately represent patient satisfaction within a variety of non-Western cultural medical service contexts.<sup>46</sup>

## Appendix

### Chinese Outpatient Satisfaction Measure.

		1	5
		Strongly disagree ← → Strongly agree	
Dimension	Item No.	Item	
Efficiency	On this visit, I felt the doctor . . .		
	ef1	was able to promptly meet my demands	
	ef2	handled my examination in the shortest time	
	ef3	prescribed my treatment quickly	
	ef4	was efficient	
Fairness	On this visit, . . .		
	fa1	I felt the medical fees are worthwhile	
	fa2	I felt I can afford the treatment	
	fa3	I felt the cost of my treatment is fair	
	fa4	I felt I can get the medical care I need without being set back financially	
Chin-chieh	On this visit, I felt the doctor . . .		
	cc1	was chin-chieh	
	cc2	was kind and gentle	
	cc3	treated me in a kind and courteous manner	
	cc4	gave me individual attention	
Professionalism	On this visit, I felt the doctor . . .		
	pr1	was able to give me the correct treatment	
	pr2	was able to reach a clear diagnosis	
	pr3	demonstrated professionalism	
	pr4	was medically competent in his/her field	

(continued)

## Appendix (continued)

Dimension	Item No.	I ← → 5	
		Strongly disagree	Strongly agree
Responsibility	On this visit, I felt the doctor . . .		
	re1	reminded me about important aspects of my care	
	re2	carefully checked everything while examining and treating me	
	re3	would help me to find the medical resources I needed	
	re4	disclosed the sided effects of medicines	
Respect	On this visit, I felt the doctor . . .		
	res1	was empathetic to my various needs	
	res2	wanted me to become involved in my treatments	
	res3	accepted my religious outlook	
	res4	made me feel respected	

### Acknowledgments

Ryan Shuwei Hsu supervised the statistical analysis carried out by Dr. Huei-Lin Shih. James Stanworth directed the data collection that was facilitated by Dr. Chao Lin. We value the time taken by our experts to examine the validity of the items used in our draft instrument. We extend our appreciation to patients who gave responses to the questionnaire during a stressful time in their lives.

### Author Contributions

James Stanworth participated in all aspects of the study and drafted the manuscript. Ryan Hsu participated in the study design, the statistical analysis, and drafting the manuscript. Clyde Warden assisted in drafting and refining the manuscript.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### References

1. Fowler FJ, Levin CA, Sepucha KR. Informing and involving patients to improve the quality of medical decisions. *Health Aff (Millwood)*. 2011;30:699-706.
2. Tsai TC, Orav EJ, Jha AK. Patient satisfaction and quality of surgical care in US hospitals. *Ann Surg*. 2015;261:2-8.
3. Wu T-Y, Majeed A, Kuo KN. An overview of the healthcare system in Taiwan. *London J Prim Care*. 2010;3:115-119.
4. Kondo KK, Damberg CL, Mendelson A, et al. Implementation processes and pay for performance in healthcare: a systematic review. *J Gen Intern Med*. 2016;31:61-69.
5. Tan EC, Pwu R-F, Chen DR, Yang MC. Is a diabetes pay-for-performance program cost-effective under the National Health Insurance in Taiwan? *Qual Life Res*. 2014;23:687-696.

6. Lin A. *Checking Up on Taiwan Healthcare: Market Challenges and Opportunities*. New York, NY: PricewaterhouseCoopers; 2012.
7. Visitor Arrivals by Purpose of Visit. *Tourism Bureau, M.O.T.C. Republic of China (Taiwan)*. <http://admin.taiwan.net.tw/upload/statistic/20160128/ea68a957-8c34-4883-a60e-919a2928c8f3.xls>. Published 2015. Accessed December 11, 2016.
8. Gill L, White L. A critical review of patient satisfaction. *Leadersh Health Serv*. 2009;22:8-19.
9. Hawthorne G. *Review of Patient Satisfaction Measures*. Canberra: Department of Health and Ageing, Australian Government; 2006.
10. Morisky DE, Green LW, Levine DM. Concurrent and predictive validity of a self-reported measure of medication adherence. *Med Care*. 1986;24:67-74.
11. Sitzia J, Wood N. Patient satisfaction: a review of issues and concepts. *Soc Sci Med*. 1997;45:1829-1843.
12. Fitzpatrick R. Surveys of patients satisfaction: I—important general considerations. *BMJ*. 1991;302:887-889.
13. Ware JE, Snyder MK, Wright WR, Davies AR. Defining and measuring patient satisfaction with medical care. *Eval Program Plann*. 1983;6:247-263.
14. Kleinman A. Concepts and a model for the comparison of medical systems as cultural systems. *Soc Sci Med*. 1978;12:85-93.
15. Kleinman A. *Patients and Healers in the Context of Culture: An Exploration of the Borderland Between Anthropology, Medicine, and Psychiatry*. Berkeley: University of California Press; 1980.
16. Wong WS, Fielding R, Wong CM, Hedley AJ. Psychometric properties of the Nine-Item Chinese Patient Satisfaction Questionnaire (ChPSQ-9) in Chinese patients with hepatocellular carcinoma. *Psychooncology*. 2008;17:292-299.
17. Andaleeb SS. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Soc Sci Med*. 2001;52:1359-1370.
18. Mostafa MM. An empirical study of patients' expectations and satisfactions in Egyptian hospitals. *Int J Health Care Qual Assur Inc Leadersh Health Serv*. 2005;18:516-532.
19. al-Qatari G, Haran D. Determinants of users' satisfaction with primary health care settings and services in Saudi Arabia. *Int J Qual Health Care*. 1999;11:523-531.

20. National Health and Family Planning Commission of the People's Republic of China. <http://www.nhfpc.gov.cn/>. Accessed August 29, 2016.
21. 中華民國衛生福利部. 統計處. 中華民國衛生福利部. [http://www.mohw.gov.tw/CHT/DOS/Statistic.aspx?f\\_list\\_no=312&fod\\_list\\_no=1604](http://www.mohw.gov.tw/CHT/DOS/Statistic.aspx?f_list_no=312&fod_list_no=1604). Accessed August 28, 2016.
22. Nisbett RE. *The Geography of Thought: How Asians and Westerners Think Differently—and Why*. New York, NY: Free Press; 2004.
23. Araujo D, Davids K, Passos P. Ecological validity, representative design, and correspondence between experimental task constraints and behavioral setting: comment on Rogers, Kadar, and Costall (2005). *Ecol Psychol*. 2007;19:69-78.
24. Smith AM, Reynolds NL. Measuring cross-cultural service quality: a framework for assessment. *Int Mark Rev*. 2002;19:450-481.
25. Stanworth JO, Hsu RS, Wu H-H, et al. (in press) When culture matters: determinants of Chinese in-patients' satisfaction with their care.
26. Butterfield LD, Borgen WA, Amundson NE, Maglio A-ST. Fifty years of the critical incident technique: 1954-2004 and beyond. *Qual Res*. 2005;5:475-497.
27. Stanworth JO, Hsu RS, Chang HT. Interpersonal service quality of the Chinese: determinants and behavioral drivers. *Serv Bus*. 2015;9:515-540.
28. Chang H. Harmony as performance: the turbulence under Chinese interpersonal communication. *Discourse Stud*. 2001;3:155-179.
29. Tang Y-T, Stanworth JO, Chen W-T, Huang S-W, Wu H-H. Toward a measure of Chinese hypermarket retail service quality. *Total Qual Manag Bus Excell*. 2015;26:327-338.
30. Rossiter JR. The C-OAR-SE procedure for scale development in marketing. *Int J Res Mark*. 2002;19:305-335.
31. Parasuraman A, Zeithaml VA, Berry LL. Servqual: a multiple-item scale for measuring consumer perceptions. *J Retail*. 1988;64:12-40.
32. Haynes SN, Richard D, Kubany ES. Content validity in psychological assessment: a functional approach to concepts and methods. *Psychol Assess*. 1995;7:238-247.
33. Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? appraisal and recommendations. *Res Nurs Health*. 2007;30:459-467.
34. Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? critique and recommendations. *Res Nurs Health*. 2006;29:489-497.
35. Lynn MR. Determination and quantification of content validity. *Nurs Res*. 1986;35:382-386.
36. Hinkin TR. A review of scale development practices in the study of organizations. *J Manag*. 1995;21:967-988.
37. IBM SPSS. IBM analytics. <http://www.ibm.com/analytics/us/en/technology/spss/>. Accessed August 28, 2016.
38. Hair JR Jr, Anderson RE, Tatham RL, Black WC. *Multivariate Data Analysis With Reading*. Upper Saddle River, NJ: Prentice Hall; 1995.
39. Hammond KR. Brunswik Essay #2. <http://www.albany.edu/cpr/brunswik/notes/essay2.html>. Published 1998. Accessed October 15, 2016.
40. Obeidat RF, Homish GG, Lally RM. Shared decision making among individuals with cancer in non-Western cultures: a literature review. *Oncol Nurs Forum*. 2013;40:454-463.
41. Imrie BC, Cadogan JW, McNaughton R. The service quality construct on a global stage. *Manag Serv Qual*. 2002;12:10-18.
42. Choi K-S, Lee H, Kim C, Lee C. The service quality dimensions and patient satisfaction relationships in South Korea: comparisons across gender, age and types of service. *J Serv Mark*. 2005;19:140-149.
43. Dabholkar PA, Thorpe DI, Rentz JO. A measure of service quality for retail stores: scale development and validation. *J Acad Mark Sci*. 1996;24:3-16.
44. DeVoe JE, Wallace LS, Fryer GE Jr. Measuring patients' perceptions of communication with healthcare providers: do differences in demographic and socioeconomic characteristics matter? *Health Expect*. 2009;12:70-80.
45. Joy A. Gift giving in Hong Kong and the continuum of social ties. *J Consum Res*. 2001;28:239-256.
46. Henrich J, Heine SJ, Norenzayan A. The weirdest people in the world? *Behav Brain Sci*. 2006;1:1-23.