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## Original Article

## A mixed method analysis of patients' complaints: Underpinnings of theory-guided strategies to improve quality of care

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## ABSTRACT

**Purpose:** Patients' complaints can be predictors of patient care quality and safety. Understanding patients' complaints could help healthcare organizations target the areas for improvements. The purpose of this study is to use a mixed method analysis to a) examine the characteristics and categories of patients' complaints, b) explore the relationships of patients' complaints with professions and units, and c) propose theory-based strategies to improve care quality.

**Methods:** This is a descriptive mixed method study. Data examined are patients' complaints filed at a university-affiliated hospital in China from January 2016 to December 2017. A qualitative content analysis was conducted to categorize complaints. A TwoStep cluster analysis was performed to provide an overall profile of patients' complaints. Chi-Square tests were conducted to investigate the relationships among complaints, professions, and units.

**Results:** 838 complaints were filed, with 821 valid cases for analysis. Six categories surfaced from the qualitative analysis: uncaring attitudes, unsatisfactory quality of treatment or competence, communication problems, the process of care, fees and billing issues, and other miscellaneous causes. Physicians received most of the complaints (56.6%). The unit receiving the most complaints were outpatient clinics and medical support units (52.7%). The cluster analysis indicated four distinct clusters. Significant relationships existed between complaints and professions ( $\chi^2(20) = 178.82, P < 0.01$ ), and between complaints and units ( $\chi^2(15) = 42.72, P < 0.01$ ).

**Conclusions:** Patients' complaints are valuable sources for quality improvements. Healthcare providers should be not only scientifically knowledgeable, but also humanistic caring. Caring-based theories may provide guidance in clinical practice.

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## 1. Introduction

The foci of healthcare have continued to evolve around the world. In the United States, the focus of healthcare has been the shift of the payment system from volume-based services to value-based care [1]. The value-based payment program ties patients' experiences and quality of care to hospitals' financial benefits, rewarding hospitals for their performance and improvements in patients' hospital experiences, the processes of care, patient care

outcomes and safety, and care efficiency [1]. Professional organizations including the Institute of Medicine and the American Nurses Credentialing Center have also been pioneers in promoting patients' experiences, safety, and care quality.

Compared with the value-based healthcare systems in the United States, the healthcare payment system in China is mainly a fee-for-service structure. The fee-for-service structure uses a market-like operation and incentivizes healthcare providers to focus on the volume of services and the drugs, equipment, and tests that may produce higher profit margins [2,3]. As healthcare cost rises, patients' out-of-pocket payments increase, which may be one of the significant factors leading to the increases of patients' complaints and intensified patient-provider relationships [4]. The rising patients' complaints and deteriorated patient-provider

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relationships have been a significant concern in China [5,6]. In addition, contradictions exist between supply and demand in the current healthcare field and between the people's higher expectations for medical services and the insufficiency of provisions [7].

Striving to meet the increasing expectations for healthcare services, the Chinese healthcare delivery system tries to make improvements to address patient care quality. The accreditation process from the Joint Commission International, an internationally recognized healthcare accreditation organization, has provided additional incentives and enhancements in improving patient experiences and care quality. Patient care quality and safety are among the top priorities for the Joint Commission International, which requires organizations to track and manage patients' complaints appropriately [8]. As a part of the quality improvement efforts, hospitals increasingly pay attention to their quality improvements and set up specific departments to receive and manage patients' complaints [9].

Patients' complaints are unstructured and voluntary information that patients and families report to hospitals regarding their unsatisfactory hospital experiences. This information contains patients' feelings, values, and expectations for care, which has increasingly been recognized as a valuable source of patients' safety and care quality [10]. To utilize this source appropriately, it is necessary to understand patients' complaints and target specific areas for improvements. Therefore, the purpose of this study is to use a mixed method analysis to a) examine the characteristics and categories of patients' complaints, b) explore the relationships of patients' complaints with professions and units, and c) propose theory-based strategies to improve care quality.

## 2. Methods

### 2.1. Study design

This is a descriptive mixed method study combining a qualitative content analysis and quantitative correlational tests.

### 2.2. Data source and study setting

The study site is a university-affiliated hospital located on the east coast of China. The data source for this study was the complaints filed by patients or their relatives in the hospital from January 2016 to December 2017. A permission for authors to analyze the de-identified patients' complaints data has been received from the Department of Research Management of the hospital studied in China. The study was also approved by the Institutional Review Board of the first author's university in the United States (Certification: UMCIRB 18-000907).

This university-affiliated hospital includes four campuses with about 4000 hospital beds. During the period of this study, the outpatient and emergency visits of the hospital were about 9,630,000, in-patients 360,000, and surgery cases 176,800. Patients could file complaints in three ways: telephone, in-person, or mail.

### 2.3. Data analysis

#### 2.3.1. Qualitative data analysis

A qualitative content analysis was conducted to examine the characteristics and categories of patients' complaints. Authors (YM, HC, and JM) coded and categorized the complaints initially. Two other authors (HW and TW) conducted and double-checked the qualitative content analysis to ensure accuracy. The process of the data analysis included the following steps.

To begin the data analysis, the de-identified patients' complaints were stored and organized in Microsoft Excel<sup>®</sup> spreadsheet. A

conventional content analysis approach [11] was used to examine the characteristics of patients' complaints. After major categories surfaced during the content analysis, patients' complaints were categorized into one of the categories based on the characteristics. For example, if a patient's complaint was that a desk clerk was rude when talking to the patient, this complaint was categorized into a category about uncaring attitudes. If a complaint was that a doctor was not perceived being competent because he/she did not listen to the patient carefully and gave inadequate treatment, this complaint was then categorized into a category of unsatisfactory quality of treatment and competence.

#### 2.3.2. Quantitative data analysis

Quantitative data analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 24.0. A TwoStep cluster analysis was conducted to examine the overall profiles of patients' complaints using professions, units, and categories of complaints as criterion variables. Chi-Square tests were then conducted to further investigate the relationships among the following variables: categories of complaints, professions, and units.

## 2.4. Theoretical framework

To promote a humane and caring patient-provider relationship, caring relationship-based theories may be used as a guide in clinical practices. The Swanson Caring Theory is one of the caring-based theories that may provide guidance in practice to improve providers' caring behaviors, which would, in turn, improve patients' satisfaction. According to the Swanson Caring Theory, caring is a process that requires knowing, being with, doing for, enabling, and maintaining belief in providing patients' care [12,13].

## 3. Results

### 3.1. Demographics of patients' complaints

There were 838 complaints in 2016 and 2017. Among the 838 complaints, 603 complaints were filed via phone, 221 in person, and 14 via letter mail. Patients' complaints were filed by either patients (404; 48.2%) or family members (434; 51.8%) and slightly more often by males (437; 52.1%).

Physicians received the most of the complaints (474; 56.6%), followed by desk clerks (128; 15.3%). Nurses were the least often identified in the patient complaints (65; 7.6%). Units that got the most of the complaints were outpatient clinics and medical support units (442; 52.7%). Units that received the least amount of the complaints were gynecology and pediatrics (74; 8.8%). Demographics of patients' complaints are displayed in Table 1.

### 3.2. Characteristics and categorizations of patients' complaints

Based on the qualitative content analysis, six major categories of patients' complaints surfaced. These categories included uncaring attitudes (224/838, 26.7%), unsatisfactory quality of treatment and competence (222/838, 26.5%), communication problems (147/838, 17.5%), processes of care (109/838, 13.0%), fees and billing (66/838, 7.9%), and miscellaneous (69/838, 8.2%). It was apparent that professionals' humaneness, caring, competence, and communication skills were the top concerns for patients and families.

Patients or family members complained about healthcare professionals' uncaring attitudes when they perceived that healthcare professionals did not show a willingness to help or act in a humane or caring manner. Examples of complaints about uncaring attitudes included the following situations: patients perceived that healthcare professionals displayed indifferent expressions, used

**Table 1**  
Frequencies and percentages of key measures.

Measures	n	%
Gender		
Male	437	52.1
Female	379	45.2
Unsure	22	2.6
Person filing complaints		
Patients	404	48.2
Family members	434	51.8
Professionals whom were complained		
Physicians	474	56.6
Nurses	65	7.6
Medical technicians	77	9.2
Desk clerks	128	15.3
Hospital in general	88	10.5
Unsure	6	0.7
Units that were complained		
Internal medicine	123	14.7
Surgery	187	22.3
Gynecology and pediatrics	74	8.8
Outpatient clinics and medical support units	442	52.7
Unsure	12	1.4
Categories of complaints		
Uncaring attitudes	224	26.7
Communication problems	147	17.5
Unsatisfactory quality of treatment and competence	222	26.5
Processes of care	109	13.0
Fees/billing	66	7.9
Miscellaneous	69	8.2
Unsure	1	0.1

unfriendly language tones, were impatient with patients' questions, or did not give thorough explanations when answering questions. Other complaints about attitudes were that: healthcare providers exhibited irritation when asked to repeat answers, reprimanded patients and families, or acted in a way making patients feel bad or psychological or emotional stressed.

Unsatisfactory quality of treatment and competence were filed when patients or family members believed that healthcare professionals failed to treat or care competently. Examples of patients' complaints in this category included: patients or family members thought that some of the young healthcare providers lacked professional training or clinical experiences, or were not competent in their professions. Patients filed complaints about treatment quality and competence if they did not feel that healthcare providers

performed a thorough job examining or observing patients, which they perceived as reasons for treatment delays or medical errors.

Healthcare providers' communication skills were criticized when patients noticed that healthcare professionals did not communicate in a humane or polite manner. Examples were that patients felt that healthcare staff failed to provide sufficient explanations about their diagnoses, treatment plans, and procedures, or that patients did not feel that healthcare providers delivered the information in a timely and caring manner. Some patients felt ignored when they asked questions. They reported that healthcare staff, instead of attending to patients' questions, were chatting amongst themselves.

Complaints regarding the care process were related to the flow of patient care in the healthcare system. The main complaint about the process was patients' perceptions of long waiting times to register, to be seen, to have diagnostic work done, or to obtain medications. Patients' perceptions of high treatment and medical service charges were also one of the major complaints. They complained about fees when they felt that they were charged unreasonably high. Miscellaneous factors included unclean hospital environments or machine malfunctions.

### 3.3. Cluster analysis of the complaints

The cluster analysis indicated four distinct groups or clusters (Table 2). Units were the most important predictor in determining the clusters (predictor importance score = 1.0), followed by professions (0.87), and categories of complaints (0.47). The quality of the four cluster model was fair with average silhouette equal to 0.2. A Listwise deletion method, a commonly used approach to handle missing data, was applied to handle the missing data in the study [14]. In this method, when a value is missing in a case, the entire case is considered invalid and excluded from the data analysis. Among the 838 patients' complaints, the Listwise deletion method indicated 821 valid cases which were used in the cluster analysis.

The following is a narrative summary of the four clusters. Cluster 1 comprised 17.2% (141/821) of valid responses. The complaints in this cluster mainly targeted physicians and hospital general issues (78.7%) on the surgical, gynecology, and pediatric units (71.6%). The complaints were mainly about professionals' uncaring attitudes (41.1%). Cluster 2 included 28.4% (233/821) of the sample. Complaints were mainly against physicians (99.6%) on internal

**Table 2**  
Profiles of four clusters.

Measures	Cluster 1 (n = 141)		Cluster 2 (n = 233)		Cluster 3 (n = 260)		Cluster 4 (n = 187)	
	n	%	n	%	n	%	n	%
Professions								
Physicians	68	48.2	232	99.6	29	11.2	142	75.9
Nurses	19	13.5	0	0.0	0	0.0	45	24.1
Technicians	5	3.5	0	0.0	72	27.7	0	0.0
Desk clerks	6	4.3	0	0.0	118	45.4	0	0.0
Hospital general issues	43	30.5	1	0.4	41	15.8	0	0.0
Units								
Internal medicine	16	11.3	105	45.1	0	0.0	2	1.1
Surgery	57	40.4	128	54.9	0	0.0	0	0.0
Gynecology and pediatrics	44	31.2	0	0.0	0	0.0	30	16.0
Outpatient clinics and medical support units	24	17.0	0	0.0	260	100.0	155	82.9
Categories of complaints								
Uncaring attitudes	58	41.1	31	13.3	79	30.4	52	27.8
Communication problems	2	1.4	46	19.7	35	13.5	63	33.7
Unsatisfactory quality of treatment and competence	3	2.8	111	47.6	32	12.3	72	38.5
Processes of care	4	8.5	25	10.7	67	25.8	0	0.0
Fees/billing	13	9.2	20	8.6	32	12.3	0	0.0
Miscellaneous	52	36.9	0	0.0	15	5.8	0	0.0

medicine and surgical units (100.0%). The unsatisfactory quality of treatment and competence was the biggest problem (47.6%). Cluster 3 was the largest group which comprised 31.7% (260/821) of the sample. Complaints in this cluster were filed against outpatient clinics and medical support units (100%) about a wide range of professions including desk clerks (45.4%), technicians (27.7%), hospital general issues (15.8%), and physicians (11.2%). Cluster 4 comprised 22.8% (187/821) of the sample. All the complaints in this cluster were against physicians and nurses (100%) on outpatient clinics and medical support units (82.9%) about unsatisfactory quality of treatment and competence (38.5%), communication problems (33.7%), and uncaring attitudes (27.8%).

3.4. Chi-Square tests on relationships

3.4.1. Relationships between complaints and professions

Based on the profiles of patients' complaints, Chi-Square tests were conducted to further evaluate the relationships between complaints and professions, and between complaints and units (Table 3). Chi-Square tests showed significant associations between complaints and professions ( $\chi^2(20) = 178.82, P < 0.01$ ). Complaints about physicians were most concerned about the quality of treatment and competence (173; 36.5%). Complaints about nurses, diagnostic technicians, and desk clerks were most about their uncaring attitudes.

3.4.2. Relationships between complaints and units

Based on the Chi-Square tests, significant associations existed between complaints and units ( $\chi^2(15) = 42.72, P < 0.01$ ). Complaints of internal medicine were mainly about uncaring attitudes and the quality of treatment and competence (55.2%). Patients' complaints of surgery services were largely about the quality of treatment and competence (42.8%). Complaints of other units were most often about their uncaring attitudes.

4. Discussion

Using a mixed method analysis, this study not only provided information about the characteristics and categories of patients' complaints, but also investigated the relationships between patients' complaints, professions, and units. The findings of this study demonstrated that among the healthcare professions, physicians received the most of the complaints. Among the hospital units, the one receiving the most complaints was outpatient clinics, followed by surgery and internal medicine.

Based on the complaints, patients desired their care to be delivered in a timely, safe, competent, and caring manner. Complaints of physicians were mainly about the unsatisfactory quality of treatment and competence. Complaints of nurses, diagnostic technicians, and desk clerks were more about their uncaring attitudes. Patients gauged the quality of care based on the process of care, outcomes of treatment, patient-provider relationships, communication with professionals, the fairness of charges, and hospital environments. Patients' desires for quality of care found in this study were consistent with the assessment components used to evaluate hospitals' performance by the value-based purchasing program [1].

In this study, patients' complaints were classified into six categories: 1) uncaring attitudes, 2) unsatisfactory quality of treatment and competence, 3) communication problems, 4) the processes of care, 5) fees/billing, and 6) miscellaneous. These categories indicated four main areas of focus in healthcare: a) clinical care – patient quality of care and safety; b) patient-provider relationships – including uncaring attitudes and communication; c) organizations' management issues – the process of patients' care and billing; and

Table 3 Relationships between reasons of complaints and professionals/units that were complained about.

Measures	Uncaring attitudes		Communication problems		Quality of treatment competence		Processes of care		Fees/billing		Miscellaneous		Total
	n	%	n	%	n	%	n	%	n	%	n	%	
Professions*													
Physicians	108	22.8	92	19.0	173	36.5	46	9.7	32	6.8	23	4.9	474
Nurses	27	41.5	16	24.6	14	21.5	3	4.6	3	4.6	2	3.1	65
Diagnostic Technicians	28	36.4	11	14.3	16	20.8	15	19.5	6	7.8	1	1.3	77
Desk clerks	44	34.4	21	16.4	15	11.7	24	18.8	9	7.0	15	11.7	128
Hospital in general	15	17.0	7	8.0	3	3.4	20	22.7	15	17.0	28	31.8	88
Units**													
Internal medicine	34	27.6	21	17.1	34	27.6	12	9.8	14	11.4	8	6.5	123
Surgery	34	18.2	28	15.0	80	42.8	18	9.6	14	7.5	13	7.0	187
Gynecology and pediatrics	22	29.7	14	18.9	18	24.3	7	9.5	5	6.8	8	10.8	74
Outpatient clinics and medical support units	132	29.9	83	18.8	88	19.9	67	15.2	33	7.5	39	8.8	442

Note: \* Relationships between complaints and professions ( $\chi^2(20) = 178.82, P < 0.01$ ); \*\* Relationships between complaints and units ( $\chi^2(15) = 42.72, P < 0.01$ ).

d) hospital general issues – environments of patients' care. Knowing these specific areas of patients' complaints may provide guidance for healthcare organizations to tailor their quality improvement strategies.

A trusting patient-provider relationship is a contributing factor to patients' perceptions of quality of care. The results of this study demonstrated that more than 40% of the patients' complaints were related to patient-provider relationships such as providers' uncaring attitudes and unacceptable communication skills. One study [15] found that patients' satisfaction was fifteen times ( $OR = 14.995$ ) higher among patients who trusted healthcare providers than those who did not. Trust was fundamental to patient-provider relationships and patients' satisfaction.

Depreciated patient-provider relationships and violence against healthcare providers, however, are significant concerns in China [16]. Factors contributing to the distrust and tense patient-provider relationships are multifold. China's medical payment system and medical school curriculum could be two of the contributing factors [15]. The current fee-for-service payment mechanism and the high deductibility of patients' out-of-pocket payment could become a fuse for some of the medical violence and disputes [17]. The Chinese medical school curriculum considers medical education and practice as hard science which focuses more on scientific knowledge and procedures, but it offers limited training on humane and caring qualities [18]. As indicated in this study and other studies [10,19], uncaring attitudes, lack of humaneness and caring, represents a major cause of patients' complaints. This study is consistent with other studies' findings that in healthcare settings, patients and families desire for healthcare providers' understanding, humaneness, and caring [20,21].

One of the approaches to decreasing patients' complaints and medical disputes could be to strengthen healthcare providers' professional ethics [6]. Caring physicians and nurses are the ones who possess the characteristics of CARE – Competence, Altruism, Responsibility, and Empathy [22]. Improvement strategies may focus on enhancing healthcare professionals' interpersonal relationships. Strengthening healthcare professionals' humanness and caring behaviors may help build a trust and reverential relationship between patients and providers.

## 5. Theory-guided strategies to promote patients' care

Theory-guided professional practice models are fundamental in guiding nursing practice. Professional practice models are theoretical frameworks that provide guidance for nursing practice and give meaning to nursing [23]. Theory-based practice models can exalt nursing practice from task-oriented labor to theory-based meaningful practice and aid to create an optimal healing environment for patients and families [12,24].

A caring process is one that reflects a holistic approach to value a person as a whole and to meet his/her needs physically, emotionally, and spiritually [12]. Based on Swanson's five caring processes, caring for patients and families requires that healthcare providers a) try to understand what patients and families go through (the process of *Knowing*); b) show willingness to be with patients and families (the process of *Being with*); c) anticipate patients' and families' needs, perform treatment and care competently and artfully, and protect patients from undue harm (the process of *Doing for*); d) help patients and families think through their problems and options and guide them to make informed decisions (the process of *Enabling*); and e) support patients and families with their difficult circumstances and help them build the courage to face their current difficulties and embrace their future with new hope and meaning (the process of *Maintaining Belief*).

When patients come to hospitals, they may be overwhelmed.

Patients and families feel that they are riding on emotional rollercoasters and desire healthcare professionals' guidance and support [21]. When patients ask for guidance, healthcare providers should answer in a way in which patients feel encouraged and supported. For example, when patients endure long wait times, nurses or desk clerks may provide courtesy services such as water, tea, or newspapers in outpatient clinics to make patients feel comfortable. Without medical knowledge, patients rely on healthcare providers for information and guidance to make decisions. When informing patients about their diagnosis of advanced illnesses, physicians may sit beside patients at an eye-to-eye level and talk to them, using a voice that is soft in tone and language that is easy to understand.

Facing severe medical conditions, patients and families may have doubts about whether they could overcome their current situations. They may feel that there is a big insurmountable mountain in front of them [20]. Healthcare professionals should encourage patients, guide them in decision-making, and help them gain confidence and hope in life. In healthcare settings, even the smallest gestures by healthcare professionals could make a big impact on patients' and families' experiences [20]. Creating and maintaining a healthy healing environment is a significant responsibility for healthcare professionals to promote patient care quality [25].

## 6. Limitations and future research

This is a retrospective study based on an existing data source about patients' complaints regarding their healthcare services. This study only looked at voluntary data, which could pose a major selection bias. The data lacked detailed descriptions of patients' expectations for care. However, the analysis of the data provided valuable information about the characteristics of the complaints and the associations between patients' complaints and professionals and units. The findings of this study may provide a great foundation for understanding patients' grievances and can be used to improve overall patient satisfaction and quality of care.

Physicians and outpatient clinics generated most of the complaints in this study. Future research may be designed to further explore the root causes of this phenomenon. Findings of this study showed that the main complaint about nurses was their uncaring attitudes. Future research may further focus on the specifics of this occurrence. One recommendation is for healthcare professionals to pay attention to their caring behaviors during care delivery. Developing theory-based interventions may be necessary to improve patient care quality.

## 7. Conclusions

The relationship between patients and healthcare professionals is in a state of tension. Proper ways to prevent and manage patients' complaints are crucial to ensure patient safety and improve patient care quality. Patients' complaints can be viewed negatively as a source of problems or positively as underpinnings for performance improvement. Theory-based strategies may provide guidance to help healthcare professionals understand patients, be with them physically, psychologically, and emotionally, and help patients find and maintain hope to face their situations. For healthcare organizations to sustain financial viability, improving patient care quality and experiences is no longer an option, but a mandate.

## Author contributions

HOLLY WEI and YAN MING conceived the study and organized the team. YAN MING, HONG CHENG and JIE MING organized the

data and conducted the initial analysis. HOLLY WEI and TRENT WEI conducted and checked qualitative content analysis. HUI BIAN performed the quantitative data analysis. All authors contributed to the writing and revising of the manuscript substantially. HOLLY WEI is the corresponding author and takes responsibility for the paper as a whole.

#### Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2018.06.006>.

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