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RESEARCH ARTICLE

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Using patient feedback to predict effects of quality improvement initiatives

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Abstract

Background: Internationally, continuous efforts have been put into developing patient complaint channels to understand patients' experience and expectation of care, which can guide the improvement of health service quality. Despite agreement among the value of patient feedback, limited attention has been paid to using patient feedback to predict and promote the actual quality improvement initiatives.

Objective: To determine whether patient feedback collected from a public feedback hotline can be used to predict the effect of hospital quality service improvement initiatives.

Methods: A retrospective analysis of patient complaint data of a tertiary hospital from 2018 to 2021 was performed. Patient complaints were first coded by the standard classification method of the Australian Hospital Patient Experience Question Set. The characteristics of patients' complaints were then analysed by frequency and contingency table analysis. Finally, through Nonparametric Mann-Kendall test and Joinpoint regression model, the trends of each complaint characteristics were tested.

Results: Amongst the 771 complaints received against clinicians, approximately 75% of them were concerning doctors. 'Harm and distress' was the key reason of complaints,

followed by 'not cared for', 'lack of confidence', 'needs unmet' and 'not informed'. In 2021, the number of complaints received in relation to moderate 'harm and distress' caused by doctors increased by 667% from 2020. The categories of 'not informed', 'not cared for' and 'harm and distress' were also on the rise with statistical significance. In addition, complaints related to the lack of respect, bad attitude and unprofessional behaviour demonstrated by nurses ($n = 83$) and doctors ($n = 121$) were also recorded.

Conclusion: Patient feedbacks collected via a public feedback hotline provides a useful platform to gain insight into patient experience of care which are valuable to guide quality care improvement. To improve the care quality, clinicians need to participate in quality improvement strategies development at an early stage. Efforts in improving communication and interaction between doctors and patients are needed to improve patients' experience of care and developing patients' trust in both of the clinicians and the medical services. The study highlights the value of using public feedback hotline to generate evidence that can guide hospital service improvement.

KEYWORDS
hospital, patient feedback, quality care

Highlights

- Patient feedback can predict service quality and effects of quality improvement strategies.
- A standardized public patient feedback system is a worthwhile investment.
- Doctors and patients should strengthen communication to increase trust.
- Medical service management should improve the process mechanism.

1 | INTRODUCTION

Patient experience has a strong association with service and health outcomes[1] and is enhanced by their participation in clinical decision-making.[2] The improved patient experience can lead to improvements in clinical practice and care quality.[3–6] Patients' trust in clinicians and health services is earned when patients' opinions are listened to and their feelings and preferences are respected.[5] At the organisational level, the improvement of patient experience focuses on addressing patients' needs and respecting patients' preferences and values, leading to a higher

level of patient satisfaction with care.[6] At the system level, patient experience has been embedded in the guiding framework of health care quality, such as the Patient-Centred Outcomes Research Institute and Patient Advocacy Organizations established by American[7] and Presents Patient-Reported Outcome and Experience Measures (PROMs and PREMs) by Australia.[1,4]

1.1 | Using patient complaints to guide service improvement

Patient complaints are the feedback of unfavourable situations and problems that patients or their relatives encounter when seeking health services.[3] Research evidence indicates that patient complaints can identify problems in different departments, hospital procedures, hospital systems and environments.[8] And this spontaneous nature is easier to tap into patients' own concerns than any requirements put forward by health care organizations themselves.[9] By analysing and reviewing patient complaint data, health service and medical institutions can monitor and identify care quality and safety concerns, creating opportunities for taking timely action, making improvements, and allowing learning.[10] Integrating mechanisms for seeking patient feedback and complaints into the organization's quality system can be one of the key drivers for quality improvement, encouraging patient participation in the care process, and empowering patients to take responsibility for their own health. It is also critical to improve accountability and compliance with standards and improve overall organizational performance.[11] Many countries have built and developed patient complaint management systems, such as the Municipal Health Ombudsman in Australia,[12] Brazil[13] and England.[14]

1.2 | International experience on public complaint hotline and Government Service Convenience Hotline in China

The public complaint hotline usually has a dedicated team to receive and manage the complaints made by callers including categorising, analysing and referring. Ideally, they also provide feedback on actions as a result of the complaints. Public complaint hotlines are cost-effective with a large reception service capacity.[15] The hotline has unique advantages in increasing the complainant's initiative to obtain information.[16] For example, through the patient experience of hotline feedback, the recall bias is reduced, and the patient experience feedback is more accurate and reliable.[16] The improved accessibility, timely response, clear accountability, and effective feedback loop were also reasons for investing in developing the broad scale public telephone hotlines such as the "311" hotline in the US[17] and the "111" hotline in the National Health Service of the UK.[18] Especially during the lockdown of the COVID-19 pandemic, hotlines played an active role in telemedicine, psychological assistance, and other services.[15,19] Through the public complaint hotline, many patients and other people's information about perceptual errors and physical and mental injuries can be obtained, thus promoting patient safety.[20]

In China, a non-emergency service platform-"12345" Government Service Convenience Hotline (GSCH) was introduced in 1983 in a few major cities and has been unified and implemented across the country since 2017. It provides an effective way for patients and their families to share negative or positive feedback at the national level.[21] The hotline allows patients' family members to provide feedback on behalf of patients who are unable to self-report their own health experiences.[10] This is particularly useful when family members often accompany the elderly, children, and seriously ill patients throughout the whole medical care process in China.

1.3 | The implementation of initiatives in the chosen hospital and the research purpose

With the development of smart hospitals, the Chinese government has formulated a series of national policies, such as "smart medicine," "smart services," and "smart management".[22] In response to the national policies, the tertiary

hospital under study has implemented many initiatives in order to integrate resources, optimise processes, improve efficiency, and refine advanced technology management in 2018 and 2019. For example, in December 2018, the hospital started investing in developing telemedicine and telehealth services. In April 2019, e-medical services such as online consultation and continuous prescription for chronic diseases were introduced to the public. By the end of 2020, a total of 6261 online consultations had been conducted. The satisfaction survey conducted by the hospital itself showed that from 2018 to 2021, the satisfaction of patients has been continuously improved. Specifically, the satisfaction of outpatients has increased from 88.66% to 99.42%, and that of inpatients has increased from 83.94% to 98.68%.

The purpose of the paper is to utilise the patient complaint data concerning doctors and nurses in the chosen tertiary hospital over a 4-year period to examine the extent to which patient complaint data can contribute to predicting benefits of hospital service improvement initiatives, the understanding of patient-clinician interaction, and patients' experience of service improvement and quality.

2 | METHODS

2.1 | Data source

Data in relation to patients' complaints against doctors and nurses working in a Chinese Tertiary University-Affiliating Hospital (The Hospital) in 2018 and 2021 was extracted from the GSCH database. When complaints were made via the hotline, details were recorded by the professional telephone operator using the standardized complaint record form including the caller's information, focus of the complaint and what the callers are requesting.

2.2 | Coding

The original records of all patients' feedback from GSCH were carefully reviewed. All complaints against either doctors or nurses were then extracted to an excel file. The extracted patient complaint data were then coded based on the nature of complaints. The codes then compared with the 11 categories as detailed in Table 1 in relation to patient treatment processes derived from the Australian Hospital Patient Experience Question Set (AHPEQS) defined by the Australian Commission on Quality and Safety in Healthcare.[23] This helps moving different complaints into these 11 categories. Data that cannot be put into the 11 categories is then placed under 'other' which was subject to further content analysis to generate new themes. The data in 'other' category is divided into four sub-categories according to content analysis after discussion by researchers. The severity level and harm level of data in the 'harm and distress' category were identified by health care complaint analysis tool (HCAT).[24]

2.3 | Statistical analysis

Frequency (percentage) was used to describe the characteristics of the number, annual increase rate and complaint proportion to clinicians by patient experience. A contingency table analysis was performed to analyse harm and severity to clinicians. A nonparametric Mann-Kendall test was employed to investigate the conspicuous aspects of time trend analysis. For the trends of high-frequency complaints, a Joinpoint regression model was used. A p value less than 0.05 was considered statistically significant. Statistical analyses were performed using Microsoft Excel spreadsheets and R software (version 4.2.0).

TABLE 1 Patient experience classification framework.

No	Patient experience	Definition
1	Views not listened to	Patients' views and concerns were not listened to.
2	Needs unmet	Patients' individual needs were not met.
3	Lack of explanation	When a need could not be met, staff did not explain why.
4	Not cared for	Patients did not feel cared for.
5	Decision-making	Patients did not participate as much as possible in their own treatment and care decisions.
6	Not informed	Patients were not kept informed about his/her treatment and care adequately.
7	Poor communication between staff	Staff involved in providing care to the patient did not communicate with each other about the patient's treatment.
8	Pain relief	Patients were not given pain relief to meet their needs.
9	Lack of confidence	Patients did not feel confident in the safety of their treatment and care.
10	Harm and distress	Patients experienced unexpected harm or distress as a result of their treatment or care.
11	Did not discuss H/D	Staff did not discuss the harm or distress that patients experienced.
12	Others	Based on the focus of complaints, four additional categories are added: 1. incorrect documentation, 2. misdiagnosis (exaggerated severity), 3. respect attitude and professionalism, 4. unreasonable charges.

2.4 | Ethical approval

This study received ethical approval from the Medical Ethics Committee of the Second Affiliated Hospital of Shandong First Medical University (file number: 2022-093). The research process using patient feedback from public hotlines ensures ethical considerations and privacy implications. Patient information, including the patient's name, address, medical history and other sensitive details, is kept confidential and can only be used for the intended purpose. Patients can choose to provide feedback anonymously. In addition, feedback is used constructively to identify systemic problems and develop solutions that benefit all patients, not to punish or retaliate against individual health care providers.

3 | RESULTS

3.1 | Characteristics of complained-against doctors and/or nurses

Between 2018 and 2021, a number of 771 complaints concerning doctors ($n = 582$) and/or nurses ($n = 189$) at The Hospital were received from patients or their families via GSCH. Table 2 details the number of complaints concerning doctors and nurses. There has been an annual increase in the number and proportion of complaints against doctors with a decrease in the annual growth rate in 2021. The number and proportion of nurses' complaints did not change much and the annual growth rate showed an annual downward trend.

When analysing complaints concerning doctors and nurses separately, complaints about nurses were mainly related to 'needs unmet', 'not cared for', 'harm and distress', and 'others'. For complaints concerning doctors, in addition to the above four main areas, 'not informed', 'lack of confidence' were also the main foci of the complaints (Refer to Table 3, Table 4).

TABLE 2 Number of patient complaints of doctors and nurses between 2018 and 2021.

	Doctor			Nurse		
Year	Number ($N = 582$)	Annual increase %	Call per 100,000 patients	Number ($N = 189$)	Annual increase %	Call per 100,000 patients
2018	95	NA	6.28	31	NA	2.05
2019	128	34.74	8.02	55	77.42	3.45
2020	167	30.47	12.85	54	−1.82	4.08
2021	192	14.97	12.97	49	−9.26	3.31

TABLE 3 Some major categories of complaints against doctors in patient experience from 2018 to 2021.

	2018			2019			2020			2021		
Patient experience-doctor	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients
Needs unmet	12	NA	0.79	8	−33.33	0.50	24	200.00	1.85	4	−83.33	0.27
Not cared for	13	NA	0.86	12	−7.69	0.75	20	66.67	1.54	36	80.00	2.43
Not informed	9	NA	0.59	14	55.56	0.88	14	0.00	1.08	25	78.57	1.69
Lack of confidence	8	NA	0.53	22	175.00	1.38	22	0.00	1.69	18	−18.18	1.22
Harm and distress	23	NA	1.52	35	52.17	2.19	42	20.00	3.23	48	14.29	3.24
Others	33	NA	2.18	32	−3.03	2.01	36	12.50	2.77	65	80.56	4.39

TABLE 4 Some major categories of complaints against nurses inpatient experience from 2018 to 2021.

	2018			2019			2020			2021		
Patient experience-nurse	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients
Needs unmet	5	NA	0.33	10	100.00	0.63	11	10.00	0.85	0	−100.00	0.00
Not cared for	8	NA	0.53	10	25.00	0.63	13	30.00	1.00	16	23.08	1.08
Harm and distress	4	NA	0.26	7	75.00	0.44	5	−28.57	0.38	3	−40.00	0.20
Others	9	NA	0.59	26	188.89	1.63	22	−15.38	1.69	27	22.73	1.82

3.2 | 'Others' category of patient complaints

In the "other" category, further content analysis of patient experience confirmed that clinicians' respect, attitude and demonstrated professionalism was the most concerned area. (Refer to Table 5). The number of 204 out of 249 complaints in the 'others' category was related to the lack of respect, poor attitude, and professionalism demonstrated by nursing staff ($n = 83$) and doctors ($n = 121$).

3.3 | A changing trend in the nature of complaints concerning clinicians

The data shows a differing trend among the 11 categories of complaints against doctors and nurses. The main complained about concerning the Hospital are 'harm and distress', 'not cared for', 'lack of confidence', 'needs unmet' and 'not informed', and the secondary problems are usually 'decision-making', 'did not discuss H/D', 'lack of confidence', 'views not listened to', and 'pain relief'. 'Harm and distress' received the largest number of complaints every year, except in 2021, which was surpassed by the problem of 'not cared for'. Besides, both of the two aspects are increasing year by year (Refer to Figure 1).

The nonparametric Mann-Kendall test shows (Figure 2) an upward trend in the complaints of doctors in the categories of 'not informed', 'not cared for', and 'harm and distress', which were statistically significant ($p < 0.05$). In addition, 'not informed' is also an upward trend in the complaint rate of all clinicians ($p < 0.05$).

3.4 | 'Harm and distress' category of patient complaints

Complaints in the 'harm and distress' category were further assessed by three levels of severity (low, medium, and high) and six levels of harm (none, minimal, minor, moderate, major, and catastrophic).[24] Table 6 details the number of complaints concerning doctors and nurses that are in the medium and high severity of 'harm and distress' and in the harm levels of moderate, major, and catastrophic.

In 2020, the main level of 'harm and distress' caused by doctors was major and catastrophic. In 2021, moderate 'harm and distress' dominated, and the annual increase rate of related complaints reached 666.67% (3/23 cases).

3.5 | Trend analysis of high-frequency complaints by the joinpoint regression model

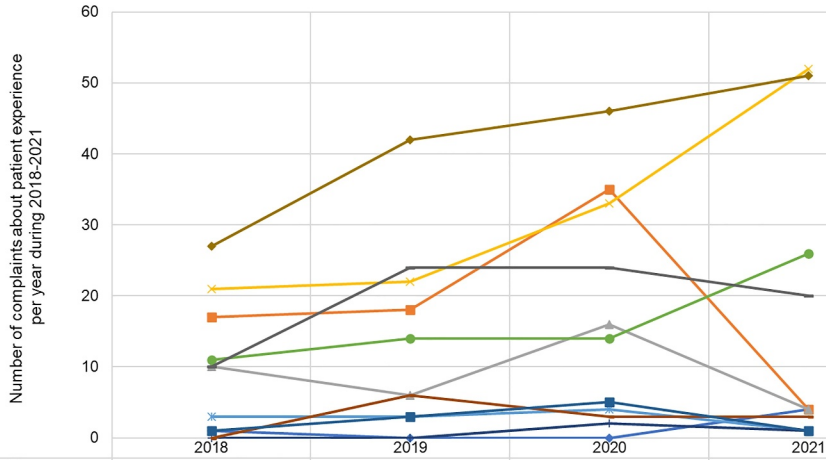
According to the Joinpoint Regression Model method, the content of three patient experiences was observed to be statistically significant: 'harm and distress', 'needs unmet' and 'not cared for'. 'Harm and distress' rose from 59.48 per 100 million hospital visits in the first quarter of 2018 to 81.06 per 100 million hospital visits in the fourth quarter of 2021. It showed an upward trend and was statistically significant throughout the period (QPC = 6.31). Using the best fitting model, the first statistically significant decrease of 'needs unmet' occurred in the third quarter of 2018 (QPC = 70585.54) and the second join point occurred in the second quarter of 2021 (QPC = −99.82). Meanwhile, 'not cared for' occurred in the third quarter of 2018 (QPC = 58194.80) (Figure 3).

4 | DISCUSSION

This study retrospectively analysed the current situation, specific categories, and severity of complaints about medical services in patient feedback and discussed trend changes. This provides insights into transforming patient experience into predicting the effects of quality improvement initiatives and providing additional medical service

TABLE 5 The "others" category of patient experience from 2018 to 2021.

	2018			2019			2020			2021		
Patient experience-others	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients
Incorrect documentation	3	NA	1.98	3	0.00	1.88	5	66.67	3.85	6	20.00	4.05
Misdiagnosis (exaggerated the severity)	0	NA	0.00	2	NA	1.25	2	0.00	1.54	4	100.00	2.70
Respect attitude and professionalism	31	NA	20.49	52	67.74	32.59	48	−7.69	36.93	73	52.08	49.31
Unreasonable charges	7	NA	4.63	3	−57.14	1.88	2	−33.33	1.54	8	300.00	5.40



	2018	2019	2020	2021
Views not listened to	1	0	0	4
Needs unmet	17	18	35	4
Lack of explanation	10	6	16	4
Not cared for	21	22	33	52
Decision-making	3	3	4	1
Not informed	11	14	14	26
Poor commutation between staff	0	0	2	1
Pain relief	0	6	3	3
Lack of confidence	10	24	24	20
Harm and distress	27	42	46	51
Did not discuss H/D	1	3	5	1

FIGURE 1 Number of complaints about patient experience per year during 2018–2021. 'Others' aspect is not displayed.

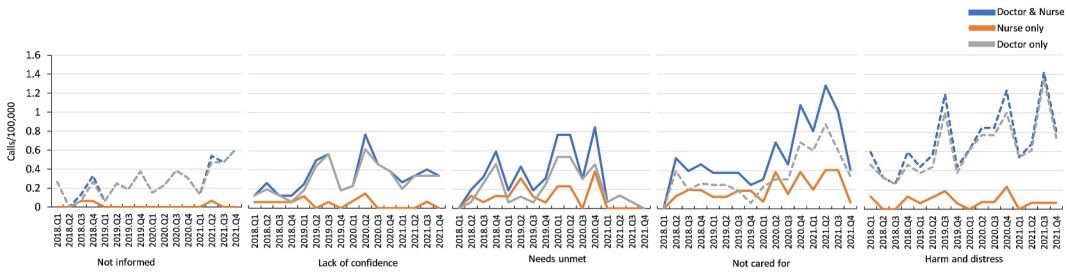


FIGURE 2 Trend of complaint rate of common complaints by quarter from 2018 to 2021. The dotted line indicates that it is statistically significant by Mann-Kendall analysis ($p < 0.05$).

improvement strategies. It is of great significance to involve patients and medical staff in the design of hospital quality improvement strategies, which can stimulate the initiative of doctors and nurses and ensure that these changes are meaningful to patients.

4.1 | Current situation analysis and improvement strategies

Patient complaint data collected via a publicly operated hotline indicated that the introduction of service improvement initiatives in the chosen Level III public hospital in China between 2018 and 2019 has not been effective in improving the patient experience of hospital care. Although complaints are influenced by many factors, the focus of the complaints undoubtedly reveal problems in the process of medical service provision. The core

TABLE 6 Harm and severity in the 'harm and distress' aspect of patient experience.

Harm in medium and high severity		2018			2019			2020			2021		
		n	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients	*n*	Annual increase %	Call per 100,000 patients
Nurses	Moderate[ab]	1	NA	0.66	0	−100.00	0.00	0	NA	0.00	2	NA	1.35
	Major[c]	1	NA	0.66	3	200.00	1.88	2	−33.33	1.54	0	−100.00	0.00
	Catastrophic[d]	0	NA	0.00	2	NA	1.25	0	−100.00	0.00	0	NA	0.00
Doctors	Moderate[b]	5	NA	3.30	10	100.00	6.27	3	−70.00	2.31	23	666.67	15.54
	Major[c]	10	NA	6.61	5	−50.00	3.13	14	180.00	10.77	2	−85.71	1.35
	Catastrophic[d]	2	NA	1.32	6	200.00	3.76	11	83.33	8.46	5	−54.55	3.38

[a]1–16 represents the first quarter of 2018 through the fourth quarter of 2021 in turn.

[b]Moderate harm: Significant intervention required to ameliorate harm (eg, from a grade 2–3 pressure ulcer, healthcare acquired infection).

[c]Major harm: Patent experienced, or faces, long-term incapacity (eg, from a dislocation, fracture, haemolytic transfusion, wrong medication side effect).

[d]Catastrophic harm: Death or multiple/permanent injuries (eg, wrong-site surgery, paralysis, permanent or chronic mental health problems).

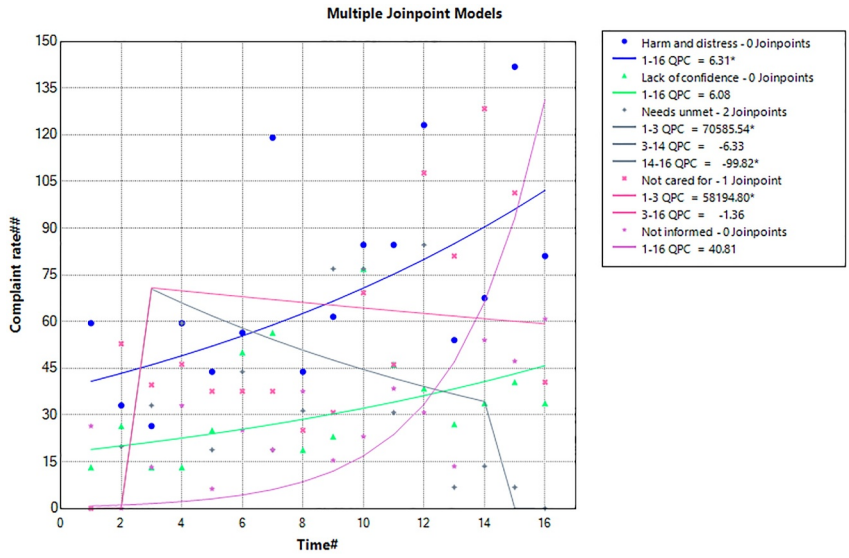


FIGURE 3 The trend of five high complaints in patient experience [#]: 1–16 represents the first quarter of 2018 through the fourth quarter of 2021 in turn. [##]: Quarterly change percentage of call per 10,000,000 patients. *: Statistically significant.

findings of this study reveal that the number of patient complaints is increasing, with a higher volume directed towards doctors than nurses, showing an upward trend, while complaints against nurses have slightly decreased. Complaints against doctors are primarily centred around categories such as "harm and distress", "not cared for" and "not informed". Additionally, patients have questioned the respect and professional attitude demonstrated by clinicians, which must be addressed to establish a patient-centred healthcare system.[3]

The patient complaint data suggests that hospitals need to improve doctors' diagnostic and treatment skills, strengthen drug safety systems, adjust information communication systems, and enhance their ability to show humanistic care. Research also indicates that to achieve a positive patient journey and quality improvement plans, doctors must possess empathy, patience, and respect, as well as achieve effective communication and interaction with patients,[3,25] so as to incorporate an understanding of patient needs.[5] For nurses, special attention should be paid to addressing issues related to effective explanation and communication during the nursing care process. Overall, there is an urgent need to address and improve safety and quality aspects in the medical process. This calls for active monitoring to identify early warnings and develop error prevention mechanisms accordingly.

4.2 | Utilising patient experience as a predictive signal for service enhancement

Patients should be provided with the opportunities to express their concerns and share their experience of care via a process that makes them feel safe and useful to guide care improvement.[26,27] Tracking patient feedback movement maximises the ability to objectively use patient feedback to inform quality care improvement. Patient-reported outcome measurement is usually faster, less burdensome, and lower cost than clinical measurement,[1] though it takes significant time and labour to obtain patient complaint information.[10] Therefore, the adoption of a appropriate feedback channel for obtaining patient feedback information is critical.[9] Collecting patient feedback via a transparent, consistent and reliable channel can build patients' trust and encourage patient participation and contribution. Developing a feedback loop and sharing actions taken as a result of the feedback received can further encourage useful feedback to be provided. A patient feedback platform managed by the government or trusted

sources independent of healthcare organizations not only ensures patients' privacy and confidentiality are protected but also supports the adoption of a consistent approach to handling, sharing, and utilising the feedback received.[26] The integration of the patient feedback into continuous quality improvement was explained in a 'framework of a successful public feedback system' proposed by Han et al. (2023 p396).[26] It further highlights the importance of a no-blame culture and policy and guidelines and how an effective feedback system should be guided by the following principles: clear purpose, creating a policy patient journey, focus on health service improvement etc.

More efforts in improving hospital service quality are on the way in China. In March 2024, the National Health Commission of China officially released a document[28] emphasising further strengthening the complaint management of medical institutions, proposing to improve the organizational structure of complaint management, standardise the setup of complaint reception places, improve the skills of complaint managers and strengthen humanistic care to improve doctor-patient communication. More examples of developing effective patient feedback mechanisms have been witnessed. For example, the First People's Hospital of Shanghai has cooperated with the municipal health hotline to build a service defect management system, build a new mode of cinema linkage, and adhere to the principle of "first-line direct operation", "three-party joint operation" and "first without litigation" since August 2022. By May 2024, the response rate of the hospital within 48 h exceeded 90%, effectively responding to patients' demands.[29]

4.3 | Recognising roles & relationships in healthcare

The understanding of the important role of interactions between medical staff and patients is required to comprehend patient feedback. Medical practice is an activity in which human beings recognise and treat diseases, involving the interaction between medical staff and the patient. Only by recognising the essence of the doctor-patient relationship can hospitals promote the in-depth development of medical services. On the one hand, the vulnerability of patients in seeking the diagnostic and treatment process should also be recognized.[3] It is critical for medical staff to provide both emotional and physical support while focussing on improving others' quality of life. This profession is characterised by a strong sense of professional trust, a commitment to caring for the health of others, lifelong learning, the irreversibility of medical behaviour, and the uncontrollability of medical outcomes. Enhancing medical staff's clear understanding of their roles and relationships can greatly alleviate difficulties that they may encounter in their careers, subsequently deepening their sincere comprehension of patients and triggering them to adopt more appropriate and effective medical service methods. In defining the doctor-patient relationship, some researchers[30] have characterised it as a dyadic one between a "service provider" and a "service receiver," with the doctor occupying a position of greater authority as the service provider. This asymmetric relationship underscores the significance of the doctor's understanding of the patient. Furthermore, research from the perspective of attachment theory suggests that doctors must have a profound comprehension of the varying ways patients express their sense of insecurity in order to establish a favourable rapport, which in turn affects patient compliance with treatment outcomes and overall satisfaction.[31]

4.4 | Collaborative decision-making & quality improvement in healthcare

In the past 20 years, various quality improvement initiatives have been continuously developed, such as developing and implementing clinical governance and quality improvement processes, developing a no blame culture and introducing quality and safety accreditation.[26,32] Among these initiatives, early engagement of medical staff in

developing quality improvement strategies is critical to ensuring what matters to patient care and what enables medical staff's effective interaction with patients are taken into consideration. When designing quality improvement initiatives, the lack of involvement of medical staff and patients in the process of defining and designing service improvement strategies can diminish the benefits of change.[33] Therefore, sharing decision-making has also become a necessary practice, which encourages health care professionals and patients to participate in the decision-making process together.[34] Shared decision-making and co-designing quality improvement strategies is a process of early and active engagement by medical staff so that their perception of quality of care that is meaningful to them and to the patients is captured and existing barriers to quality improvement are removed or addressed.[2] This ensures awareness of quality and safety is developed consistently across the organization, and medical staff's training needs in understanding quality improvement processes and tools are identified and addressed early.[32] Developing medical staff's effective communication skills and improving their interaction with patients have not received adequate attention and investment, which are fundamentals to overall quality improvement including the prevention of adverse service and patient outcomes.[35]

4.5 | Optimising quality system within a blame-free culture

Learning from patient feedback often degenerates into a mere practice of drawing lessons from errors and blaming employees in order to address the issues raised, but this approach does not align with the interests of patients, staff, or the overall goal of making healthcare safer.[36] Because when mistakes are regarded as personal failures, the result often leads to substantial self-blame, rather than considering the root cause of mistakes in the system environment.[37] Compared with this culture of blame, the term of just culture is regarded as an effective balance between individual responsibility and tolerance of human fallibility and system defects.[38] Medical institutions need to establish internal human resource management capabilities in order to make necessary changes in their culture and management system.[39] Developing a robust system and organizational culture to improve medical quality and safety is a high-level reliability strategy, which is better than focussing on processes and personal performance,[38] and is more likely to appear in health organizations that encourage employees to participate more in decision-making.[39] At present, optimising the medical system can also introduce new technologies such as artificial intelligence and big data analysis, which provide strong support for the progress of the medical care industry. Finally, it's important to eliminate the fears and scepticism of medical staff when using patient feedback to identify organization deficiencies and guide overall quality improvement,[40] and to establish a quality and safety culture and a patient-centred approach.[41]

5 | STRENGTH AND LIMITATION

The strength of this study was that data was collected over a 4-year period from a standardized government operated hotline. The adoption of a standard classification method to categorise data (AHPEQS) increased the robustness of the results. However, the motivation behind making the complaints was unknown, which might have affected the reliability of the data when used to judge the actual patient experience of care. The generalisability of this study is limited, as the data comes from one hospital in China. In addition, educational and cultural background of different patient cohorts may affect their motivation behind making complaints or providing feedback via telephone hotline. This may further limit the broader applicability of this research to other healthcare systems. To understand the actual patient experience of care and benefits of quality improvement, different data sources such as patient surveys, service data etc. Should be accessed rather than relying on one single source collected from the GSCH hotline.

6 | CONCLUSION

Feedback from patients can reveal latent or existing failures in medical service from practical experience, which is valuable to guide the improvement of medical service quality. Continuously collecting patients' feedback can provide evidence for the effectiveness of quality improvement strategies implemented by health care organizations. Findings of the current study call on hospital leaders to emphasise reducing the occurrence of harm and distress results and increasing patients' sense of being cared for. It is suggested that the next step of medical service management should focus on the perfection of process mechanisms including how to reduce the occurrence of injuries, service methods and details to enhance patients' sense of concern and trust, motives, benefits and a no blame culture to ensure that doctors and nurses can achieve hospital development goals. The improvement of care quality and safety requires clinicians to participate in formulating quality improvement strategies at an early stage, and efforts in strengthening communication and cooperation between clinicians and patients which ultimately improve patients' experience of care and trust in both of the clinicians and the medical services.

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CONFLICT OF INTEREST STATEMENT

The authors report no conflicts of interest in this work.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

This study received ethical approval from the Medical Ethics Committee of the Second Affiliated Hospital of Shandong First Medical University (file number: 2022-093). The research process using patient feedback from public hotlines ensures ethical considerations and privacy implications. Patient information, including the patient's name, address, medical history and other sensitive details, is kept confidential and can only be used for the intended purpose. Patients can choose to provide feedback anonymously. In addition, feedback is used constructively to identify systemic problems and develop solutions that benefit all patients, not to punish or retaliate against individual health care providers.

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